A McGraw-Hill Publication

Journal of Electricity

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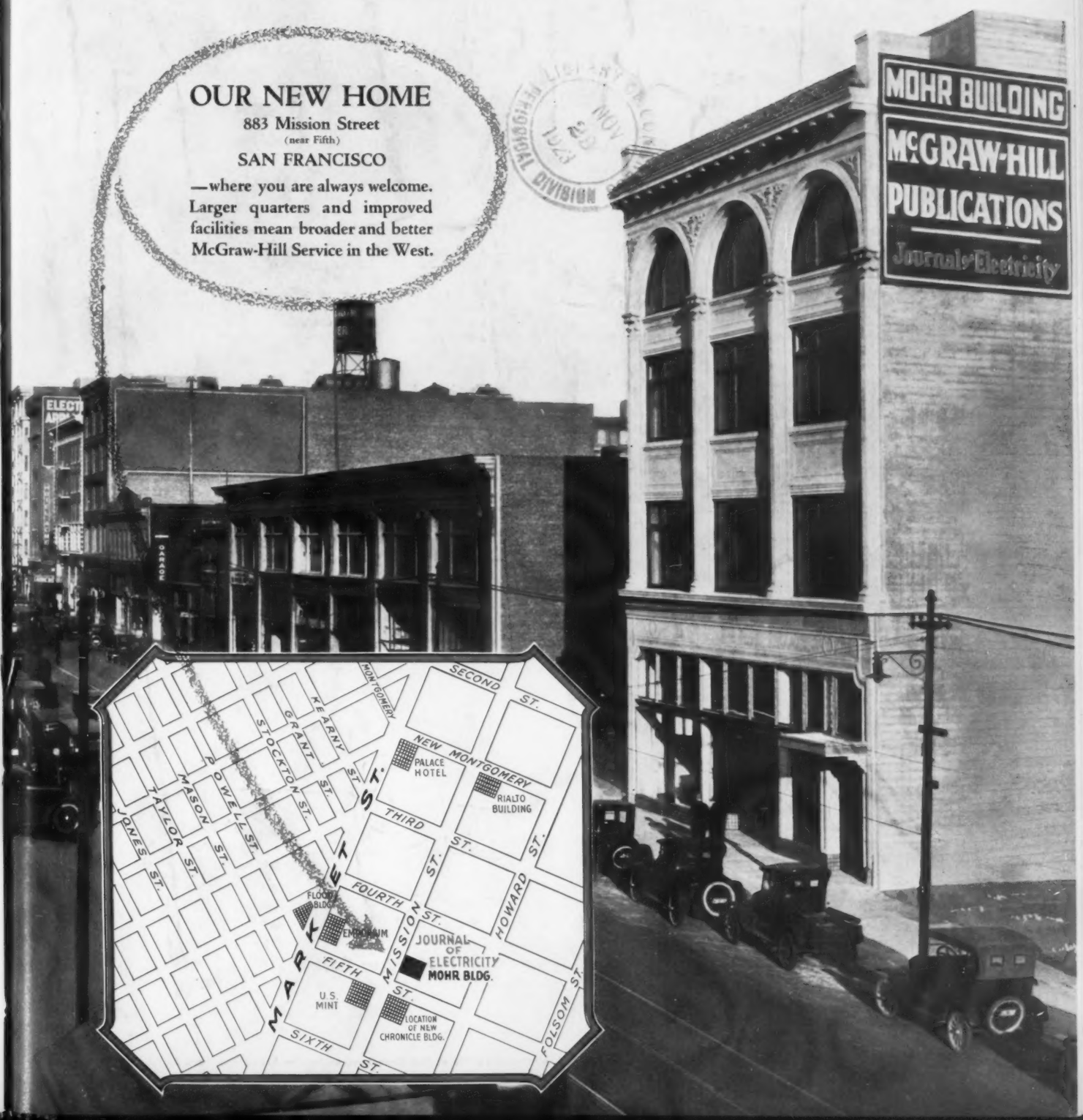

Here's an incident worth looking into

WE'VE always tried to make clear the difference between non-burning Rockbestos and ordinary insulation. But perhaps more convincing than any statement we could make is the experience of Mr. William Deans of the Sundh Electric Company, Newark, N. J. He has advised us:—

> "We wound a coil with Rockbestos Magnet Wire and taped it up with ordinary cotton tape. It was put on an A. C. Magnet Switch of an Automatic Starter.
>
> "Recently, after giving uninterrupted service for some time, for some reason or other, the coil became so overheated that the outer covering of tape was burned to a crisp. The crisped and broken strips of tape got in the way of the magnet, and put the starter out of commission.
>
> "We removed the coil, tied it up so the burned tape would not hinder its operation, and gave it a resistance-test. We were extremely pleased to see that it stood up to practically the same resistance as originally rated (about 5 ohms).
>
> "Unless we had made this test ourselves we could scarcely have believed that any magnet wire could come through such an overheating as burned off that tape without being damaged. But Rockbestos certainly did. You win."

Rockbestos is insulated with pure long-fibre asbestos and will not burn, crack, crumble or deteriorate with age. There's a type of Rockbestos for practically every purpose—Magnet Wire, Switchboard Wire, Heater Cord, Stove Wire, Motion Picture Cable, and Fixture Wire. And any knotty problem in wiring you're up against, our Engineering Department will be glad to help you work out.

Coil used on A. C. Magnet Switch of an Automatic Starter. This photograph shows the condition of the coil after it had become so overheated that the outer covering was badly charred and burned. However the Rockbestos insulation on the wire had not been damaged. Read Mr. Dean's description!

Just tell us what you want—whether it's samples and prices on Rockbestos or expert advice,—and your request will receive immediate attention.

ROCKBESTOS

Asbestos Insulated Wires and Cables

***Made by* Rockbestos Products Corp., New Haven, Conn.**

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How About Your Christmas Window Displays?

EVERY successful merchant knows the value of his display windows to his business. It is the custom of large department stores to place a dollars-and-cents advertising value upon these mediums for the display of goods and to levy this sum against each department that uses the windows. From the appearance of the windows of some electrical dealers we are inclined to believe that they have yet to learn the actual worth of their windows.

Every branch of the electrical industry is making plans to secure an increased volume of Christmas trade this year. Slogans have been written, advertising material prepared, window cut-outs planned, all with the idea of aiding the retailer to make this a truly electrical Christmas. Manufacturer, jobber and cooperative organization have taken the initiative in this work. Never has there been such a supply of choice window display material at the disposal of the retailer.

We would be inclined to place the dealer who fails to recognize the opportunity which this material affords, in the same class as the man who thinks Sodom and Gomorrah are man and wife and that the epistles are the wives of the apostles. However we feel certain that there will be no need for this classification. Reports indicate that the Christmas windows of the electrical trade this year will rank well up among the best of every other class of retail merchant.

If you have a window of which you are particularly proud, have it photographed. Send a print to the Journal of Electricity and we will gladly reproduce it in our columns. We want to prove that our declaration that the electrical retailers' Christmas windows will be among the best is something more than pure optimism.

DURADUCT

was the first non-metallic conduit to be packed in boxes for your convenience. We can furnish it either 1,000 feet to a box, or 250 feet to a carton, whichever you prefer. The small cartons are rugged enough to stand rough handling without any additional protection.

Duraduct itself can be treated rough too, without fear of injuring it.

Don't order just Loom, but specify

DURADUCT

Other DURABILT PRODUCTS you should ask for, if you want Quality material, are

DURACORD

Heavy Duty Portable Cord

DURAWIRE

Rubber Covered Wire and Flexible Cords

Tubular Woven Fabric Company

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Seeing Ourselves as Others See Us

THERE are times in the conduct of any business, especially big business, when it gets into a rut. Executives seem to go stale, and the staleness passes on down the line so that it penetrates the entire organization. The older men, who have begun their careers with all the vigor and vim and enthusiasm of youth, seem to relax. They have caught their car, and seem inclined to rest, and let the business coast, actuated by the momentum imparted by their youthful push and determination.

THEN is the time for the board of directors to take action to ward off the threatening dry rot, and, as a usual thing, they go after new blood; they seek an outside viewpoint, some red corpuscles with which to invigorate the sluggishness of the business arterial system.

THE whole system of distribution for electrical appliances, the marketing end of the industry in the Pacific Coast territory is now undergoing a microscopic analysis at the hands of an outsider, Mr. E. A. Kincaid, whose second article appears in this issue. Mr. Kincaid has no affiliations with any branch of the industry; he is a dispassionate observer, a diligent seeker for truth, who has approached the problem in a judicial frame of mind as a diagnostician who must discover what is weak and defective, and then prescribe a remedy for the purpose of effecting a cure.

CAREFULLY considered, intelligently directed criticism is good for us, all of us. "Spare the rod, and spoil the child," was the doctrine of the old-fashioned mother, even though it hurt when administered. Did not Bobby Burns say, "O, wad some Power the giftie gie us, to see oursels as ithers see us"? To those to whom careful criticism is worth more than casual compliment, Mr. Kincaid's articles will prove of constructive benefit. For those who travel upon a plane so high as to be above and beyond criticism, little can be done. We have no hesitation in recommending to all of our readers a thoughtful study of Mr. Kincaid's series, for we regard them as the most useful editorial material offered through the columns of this paper in a long time.

The Vindication of an Important Utility Doctrine

HERMAN E. CRIST, mayor of Fort Lupton, Colo., recently entered the race for public office and was elected on a public utility platform. Mr. Crist accepted for himself and advocated to other public officials the same policies which govern progressive public service organizations in the conduct of their business and in their dealings with the people. Some of the planks from Mayor Crist's platform will bear close scrutiny for they are, indeed, enlightening. We quote from his pre-election statement:

"I believe a city should be conducted as the public utilities are now conducting their business. Some years ago we all were, more or less, suspicious of our public utilities. That was because we knew so little of their business. But in recent years the utilities have pursued a policy of publicity of their acts and since then, we have come to feel we have a personal interest in their affairs and they in ours."

Referring to himself and other officials of the town, he said: "We are the authorized agents of the citizens of this town. The people have a right to know everything in connection with the conduct of their business. By taking the people into our confidence and advising them of our acts, we obviate suspicion and create a feeling of trust, just as is being done by the public utilities. We are all partners in the concern—our town—and, as such, are entitled to the fullest information."

Public utility officials and executives might well pause and consider this last statement from the mayor of this little agricultural and manufacturing city. His are words of wisdom. "By taking the people into our confidence and advising them of our acts, we obviate suspicion and create a feeling of trust." A splendid doctrine, this, and one which the utilities themselves are preaching. But they must do more than preach. The utilities must practice this doctrine every day, in every department.

The American people are sportsmen. They are receptive. If the utilities do their job and do it well and then tell the people about it, they will receive support. Had the platform of the mayor of this Colorado city failed to strike a responsive chord in the minds of the people, he would not have been elected. The deduction is simple. He was right. So, then, are the utilities.

Old Lamps for New

AS a rule the power companies are regarded as the big brothers of the electrical industry. Perhaps the relationship is more paternal than fraternal, at any rate, it is taken for granted that any other branch of the trade, when in need, may send out an S.O.S. and help will be forthcoming as a matter of course.

A short time ago the San Diego Consolidated Gas & Electric Company conceived the idea of placing at the disposal of the trade the use of its main-office windows for the purpose of displaying any gas or electric appliance. The space was available for one week, without charge, to any dealer desiring to take advantage of the opportunity for cooperative advertising.

The project met with instant favor and why not? It gave a splendid opportunity for the display of the latest and best of electrical and gas appliances, fine publicity, quickening public interest, and more business, to say nothing of the additional feature of no cost to the exhibitor.

But wait! The plot is about to thicken, to get very thick indeed. It is early morn. A truck from one of the local hardware stores draws up at the curb. A horny handed son of toil, after lubricating his hands in the conventional manner, proceeds to unload his precious cargo of exhibits. What is it, or rather, what are they? They look neither electrical nor gaseous. On the other hand, they look, nay, they actually are oil heaters, OIL heaters, intended for exhibition in the free space given by a producer of electricity and gas for the purpose of promoting his business and who is now reading with philosophic resignation Æsop's fable about the man who warmed a snake in his bosom.

The American Red Cross— A Timely Reminder

LET us not in the hubbub and turmoil of our daily business forget the American Red Cross. This humane agency, always ready in time of need, has accomplished great things. Recent events have shown its constant state of preparedness and its ever-present desire to serve the people, not of America alone, but of the entire world. Like any other organization dedicated to service, it must have funds for its operation. Nov. 11-30 has been designated as the time when the American people can show their appreciation for this noble organization by contributing to its financial support. Let this serve as a reminder that each of us should do his part.

At Last—an All-Electric Apartment House

YEARS of pioneering effort and countless thousands of dollars spent on educational work,—all for increasing the popularity and use of electric household labor-saving appliances,—are at last beginning to bear fruit. The attention of architects and builders has been directed toward the superiority of electric cooking, the practicability of electric air and water heating and the necessity for sufficient convenience outlets. Advertising, literature, electric home demonstrations and personal calls have been used in an effort to impress upon them the many conveniences that electricity affords. A few of the more bold have constructed electric homes. Many have incorporated these ideas in apartment houses. But there has never been a real "electric apartment house" in the fullest sense of the word.

After all these years, comes word from Los Angeles that there is being constructed in that city an apartment house with accommodations for 170 families—an apartment house which will be com-

pletely electrified, with range, refrigerator, dish washer, water heater and air heaters in each of the apartments.

The value of such an installation to the entire electrical industry cannot be overestimated. The dollars and cents cost of the equipment noted above is $228,000 and this does not include the fixtures or the wiring which will easily require an additional $100,000. Approximately 2,500 kw. will be added to the lines of the company serving this load. But the greater value lies in consumer satisfaction, goodwill, personal interest. These cannot be measured in terms of dollars and cents.

Let this apartment house be considered by the electrical industry as a lasting monument to those men who have pioneered in carrying the electrical message to the architect and builder.

The Anti-Climax in Government Ownership Propaganda

CYNICAL newspaper publishers have a saying to the effect that people get as good newspapers as they deserve, and that the newspapers published in any community are an index to the character of the people who live there.

We should be sorry to believe this to be true, in fact if it were true, one could draw no conclusion other than that certain communities in this fair land of ours were populated with half-wits and morons.

Take, for example, the editorial treatment of the question of state ownership of public utilities. This is a serious subject, a subject deserving calm study, and analytical treatment. It is an economic issue and should be discussed dispassionately, judicially, in a manner free from the heat and passion of partisan politics.

Nevertheless, here are a few fairly typical headlines culled from the editorial pages of a number of pro-government-ownership newspapers:

"It is a Plot, Citizens, and You Must Watch Out," screams the editor of the Los Angeles Examiner, in coming valiantly to the defense of the Los Angeles Bureau of Power and Light.

"People Must Not Mark Time While Power Concerns Capture State," is the contribution of the Los Angeles Record to the din and clamor, and adds, "The people should pay no attention to misrepresentations of the yapping reactionaries and power trust hirelings." Another contribution from the same source, "Power Trust Fights Los Angeles in Sierra's Snows and Lightnings," paints a vivid picture of conflict under conditions that would create excitement in the offices of the United States Weather Bureau.

San Francisco and Seattle papers issued by the same publisher are repetitions of the same idea. Thus the whole Pacific Coast suffers from the editorial emetics administered by these self-appointed mentors of the public.

Are the minds of the people really affected by this sort of thing? Are the ordinarily orderly mental processes of the American people being converted to the insensate passions found in mobs? We think not, if the vote of the people on the late unlamented California State Water and Power Act last fall means anything. Perhaps our saving grace is our justly celebrated sense of humor, and that all the laughs to be found in the yellow press are not confined to the comic supplement.

Price as a Factor in Gas vs. Electric Range Sales

A well known department store in one of the leading Pacific Coast cities has recently offered a popular type of gas range at a price and under terms sufficiently striking to warrant serious consideration by the electrical industry,—or that part of it which is concerned with increasing the sale and use of the electric range.

The range in question has four surface burners, an 18-in. oven and a broiler. The time payment price is $57.25 and the cash price is $54.75. The selling terms are anything from full cash to a down payment of only $2 and the balance in twelve equal monthly installments.

Contrast this with the selling of electric ranges. Granting their superiority for cooking purposes and admitting the fact that no other cooking medium has ever offered or permitted such excellence of results, it must be conceded, nevertheless, that the element of price weighs heavily on the side of the gas range. This, and this alone, is one of the greatest impeding factors in the sale of electric ranges.

A typical electric range similar to the gas range above will cost approximately $245, list, and will seldom be sold, even during special campaigns at less than cost, which is $135. The terms ordinarily offered to a purchaser of an electric range are 20 per cent down and the balance in twelve equal installments. Comparisons in this case are certainly odious for with the gas range the monthly payment will not exceed $5. Granting that there is a higher manufacturing cost to the electric range, the question still remains in our mind as to whether the difference is such that the electric range must be sold for four times the price of a similar gas appliance.

Let Electricity Make the House a Home

IN broadcasting its message for greater utilization of electricity in the home, the electrical industry is liable to slip into a rut, its story to become stilted, to lack life and conviction. Constant repetition of the same statements involving the same ideas induces a state of mind where we are inclined to get up and speak our little piece from memory in a fashion as monotonous to our audience as the recitation of the multiplication tables by a child in the fourth grade. On another page of this issue is the story of an electric home written by a woman. Her point of view is refreshing. Her ideas are distinctly new. She tells what electricity can do toward "making the house a home." If in its attempt to carry its message to the home builder and the home owner the electrical industry could but convey that wiring a house is not a "job," but that it is an art, it will have taken another step toward success.

CURRENT COMMENT

Ding in San Francisco Journal.

No Wonder She Is Over Weight.

Advocates of municipal ownership of hydroelectric utilities have been prone to hold up the example of Ontario Hydro Electric Commission as a fair example of what the people of the various communities in the West might expect to accomplish if they would but enter into the power business themselves. During the pre-election fight in California in 1922 over the unlamented Water and Power Act, the achievements of the Canadian province furnished much ammunition for the proponents of that measure. The attention of the press has again been directed toward Canada as the result of the meeting of the Public Ownership League of America at Ontario.

Ontario Held Up as Example of Public Ownership

The Seattle Times, a strong municipal ownership journal, under recent date, comments at great length upon the relationship between the proposed Washington Water and Power Act and the accomplishments of the Ontario Commission. To quote from this editorial:

> The accomplishments of the Canadian Province of Ontario in large scale production of hydro-electric power under public ownership should stimulate similar objectives in this country, long handicapped by private ownership and high rates.
>
> It is proposed to confer on the people of this state, by initiative enactment, a law empowering state-wide public ownership and operation of hydro-electric resources, through the district or local improvement method.

We challenge the statement in the foregoing paragraph and hold up as examples some of the districts served by privately owned and publicly regulated utilities in this country, where the growth has been far greater than in Ontario.

> Besides furnishing the economy and convenience of its service to the home people, the Ontario public plant has been a tremendous incentive to the building up of industrial production, creating new sources of wealth and attracting thousands of new workers and new citizens. It has accomplished a growth in ten years that the slow progress of private companies would have required probably fifty years to induce.

In conclusion, the editor says:

> The State of Washington, and particularly the Seattle district, have every reason to be interested in Ontario's experience for the reason that some of the greatest fields of potential hydro-electric power in the world are within these districts.
>
> One of the most important assurances of the prosperous future of both state and city is this splendid heritage of potential hydro-electric power, an heritage that if properly exploited in the public interest will make of this city and this state an industrial community with hundreds of thousands of workingmen, and bring millions of dollars of new capital to this state.

A pretty picture indeed, if true. However, the editor fails to point out that before this millennium will arrive there are such mere details as engineering study, financing and finally construction to be considered. "The people" as referred to in journals of this character, are the politicians. Politics will never make much of a success of a business of such serious nature as the production of electric energy.

The Fresno Bee indicates that the Ontario experience will be a factor in the next California election, when the people will vote upon a revised edition of the former Water and Power Act. This paper says:

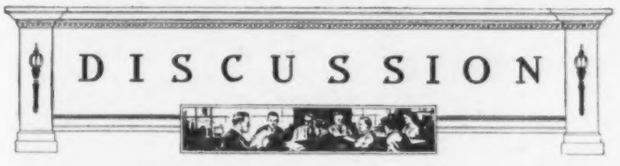
> Because of the cheapness of electric current for all purposes in Ontario, the demand for it is fast increasing, and the commission is planning for a largely increased supply from the St. Lawrence River.
>
> At the next general election in California her people should rally for adoption of public ownership and development of hydro-electric service, on some such plan as that rejected last year through the lavish expenditure of money by the private corporations now enjoying almost a monopoly of the sale of electrical energy in most parts of the state.

It is seldom that anyone finds fault with the present system of commission regulation of utilities. Experience has shown this scheme of public control to be not only just but highly successful. In the case of the following editorial which is taken from the Fresno Republican, we are forced to believe that it was written without a full knowledge of the facts. The editorial says:

Unjust Attack on California Commission

> If the light and power rates being charged in a greater part of California were to be increased, by order of the railroad commission, we would all be making a great noise about it.
>
> Let's give some credit, therefore, when the California railroad commission orders a reduction of 8 per cent in light and 14 per cent of farm power charges in 50 California towns and districts.
>
> Even with a crippled and imperfect working, state regulation is better than no regulation.
>
> Normally, no charge would be reduced by a utility corporation unless forced by competition or by an absolute refusal of patrons to do business. In other words, the normal basis of charge would be the "all the traffic would bear" rate.
>
> A state regulation rate is something else.
>
> It is determined by complaints, by hearings, by schedules of costs, by engineers' reports. It is imperfect, with all the imperfection of human agencies and the penny foolish methods of state financiers. But it does help.
>
> Let's give the railroad commission the credit of working.

The opinions expressed above are all the more surprising when it is remembered that the paper in question was formerly owned by none other than Chester H. Rowell, who until recently was a member of the California Railroad Commission.



"Standard Lighting" Book Proves Valuable for Better Illumination Campaign

To the Editor:

Sir: I am wondering if the average electrical contractor or lamp agent appreciates the value of Cushing's handbook "Standard Lighting" as a business builder. Recent experiences of this office have proven conclusively its effectiveness in bettering the illumination of a number of new buildings now under construction in this city.

The first case where the handbook had to be called into action was with a local architect who was designing a new office building for a large western life insurance company. He wanted the best illumination possible and "Standard Lighting" proved to him the type of installation to make. As a result 75 outlets were added, increasing the required wattage about 5 kw.

A church provided the next opportunity for the sale of a good lighting job, which, according to the report of our field representative, resulted as follows:

"The whole job was handled with the exclusive use of the illumination tables contained in 'Standard Lighting.' As a result the foot-candles necessary were determined along with the type of fixtures and the size of lamps.

"In consequence of this, 46 ceiling outlets, 24 switch outlets, and 11 duplex convenience outlets were added to the job. The minimum wattage was increased 10 kw. as a direct result of the League's use of the book.

"In the case of the principal auditorium of the church, the cove lighting, for instance, was increased 4,300 watts alone. Eight supplementary lighting outlets in the auditorium were doubled in the capacity of watts and 10 balcony lighting outlets were raised from 150 to 200 watts.

"Nine basement lighting outlets were increased from 150-watt capacity each to 200, and 8 others were exactly doubled."

A standard of 10 foot-candles was established in another case, that of arranging the wiring layout and lighting of a new creamery. This building is of unusual architectural design and is located in a residence section of the city. The lighting had to be in harmony with other advanced features included in the new building and the data found in Cushing's book aided immeasurably in convincing the builder. As a result the wattage of all ceiling outlets was doubled from 150 to 300. Twenty-five outlets were added, also 12 duplex convenience outlets and 8 sets of 3-way switches, not to mention the addition of 7 ornamental brackets on the outside of the building, and incidentally a 12-station interphone system.

Of course these are outstanding examples, but they are representative and likewise indicative of the possibilities in employing "Standard Lighting" as a formidable weapon in the battle to secure better illumination.

Local architects have found the book so helpful that the League has ordered 50 copies to be presented to each of the leading firms.

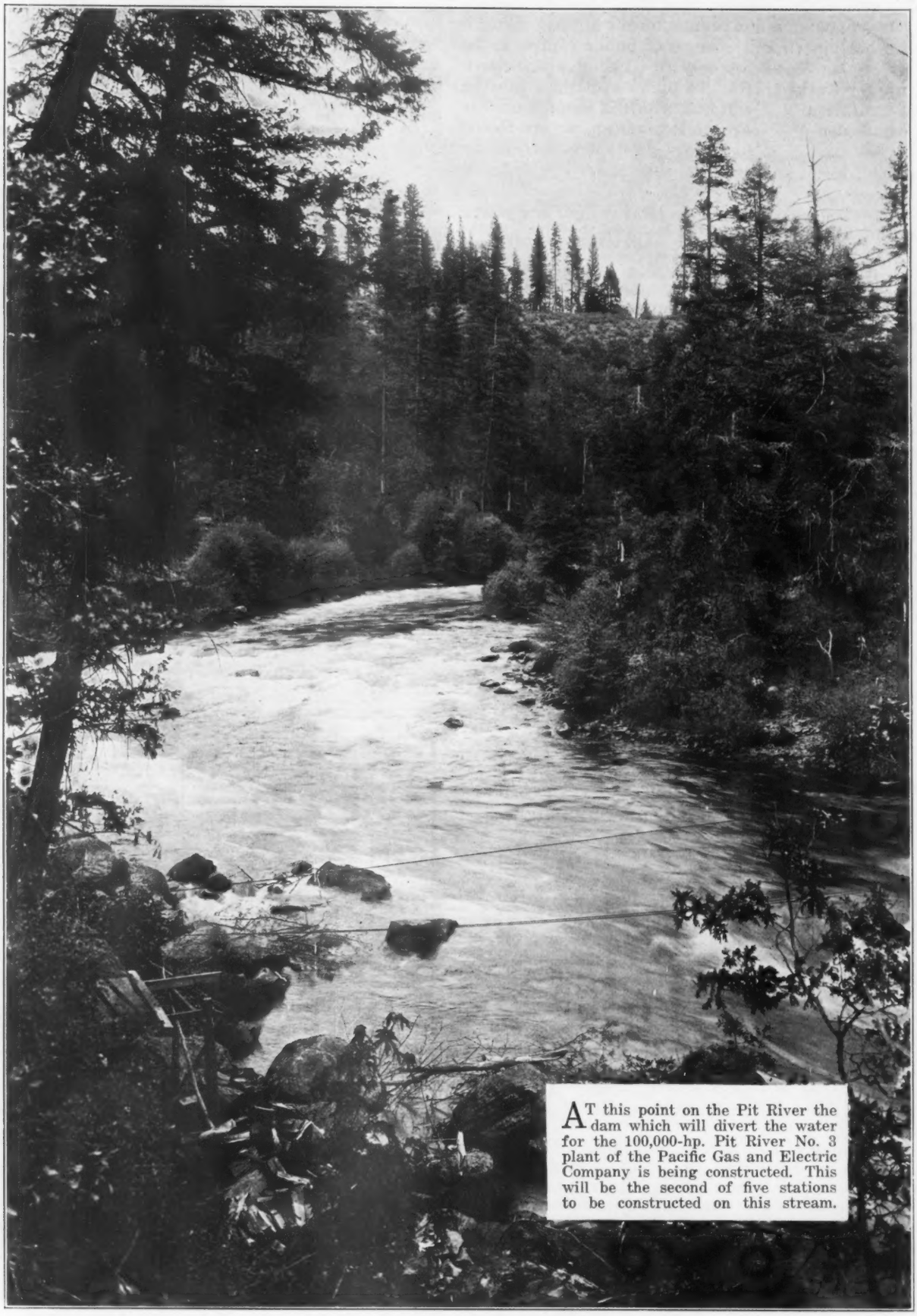
S. W. BISHOP, Executive Manager,
Denver Electrical Cooperative League.

Denver, Colo.

"ALL THEY NEED IS PROPER MIXING AND A GOOD OVEN!"
AT THE NEWS TRIBUNE COOKING SCHOOL BERNICE LOWEN WILL DELVE DEEPLY INTO DESIGNING DELICIOUS DELECTABLES
BRONCO OVENS
WE THINK IT TAKES A LITTLE DASH OF BRAINS ALSO!
"BOO HOO! I ADDED TWO EGGS TO THE PUDDING AND JOHN SAYS I SHOULD HAVE TAKEN OFF THE "SHELLS!!"
BOO HOO SNIFFLE
BERNICE WILL SOLVE THE MARITAL TRIALS OF THE NEWLYWED
SCOTTISH RITE CATHEDRAL
AROMA OF APPLE TART
NEWS TRIBUNE COOKING SCHOOL
ESSENCE OF GOOD EATS
PERFUME
AH! WE MUST BE CLOSE TO HEAVEN!!
IT'S A WISE WIFE THAT KEEPS A WELL PAVED ROAD TO HUBBY'S HEART.

Armstrong in Tacoma News-Tribune.

An Electric Cooking School Called Forth This.



AT this point on the Pit River the dam which will divert the water for the 100,000-hp. Pit River No. 3 plant of the Pacific Gas and Electric Company is being constructed. This will be the second of five stations to be constructed on this stream.

The Organization of the Electrical Market on the Pacific Coast

By E. A. Kincaid
Associate Professor of Commerce, McIntyre School of Commerce, University of Virginia

THE electrical industry must develop so that its foundation will be equal to its future expansion. There must be no delay for a rebuilding of this important part of the structure. On its distributive organization rests the future success of the electrical industry on the Pacific Coast. In this article Mr. Kincaid discusses some important phases in the development of the distribution system.

AN adequate description and analysis of the method by which electrical products are now distributed on the Pacific Coast cannot be given without considering the conditions generally prevalent throughout the entire country, and particularly in the manufacturing end of the industry. For it must be said here that the conditions which characterize the electrical market on the Pacific Coast are but the logical outgrowth of more fundamental conditions—conditions lying back—national conditions with driving forces that permeate the entire country.

Let attention now be directed to some of these basic national conditions. There has been a rapid growth of the manufacturing end of the electrical industry. New enterprises have been organized, new corporations have come into being and new inventions have been brought into an already well supplied market. Of the forty thousand patents issued annually by the United States Government a considerable portion relate to electrical devices of one sort and another. The new corporations that are organized to manufacture these new devices seek to include the value of their patents in their assets. The capitalization of these corporations is to some extent an expression of these assets and in consequence there is an effort made to break into an already well supplied market and obtain sales sufficient to permit of a return on the capitalization thus arrived at.

The competition of the numerous concerns that manufacture electrical goods of all sorts has become fairly keen. There is the effort of the older established companies to maintain their grip on the market and the assault made by new companies upon the position of those already in the field. The pressure thus placed upon the mechanism of distribution has been severe and its response has been somewhat uncertain. There has been a reluctance on the part of distributors to admit that changed conditions call for changed methods. The tendency has been for distributors to assume that distribution would go on in the future as in the past. The disposition to assume that the distributive system cannot be changed, that it is inviolate and that manufacturers must do business the way it always has been done in spite of existing defects within that system, has not placated those manufacturers who know that their chance of survival depends upon access to the market.

Thus, many manufacturers have sought entrance to the market for electrical products only to be given the impression that the doors are closed in so far as the customary channels of distribution are concerned. These same manufacturers have taken the position that if the existing distributive system would not or could not take care of additional production and provide an outlet for their goods, then other means of reaching the market must be provided through the initiative of the manufacturer. This determination to reach the market somehow, by one way or another, has resulted in throwing the distributive system for electrical products into a good deal of confusion both as to methods of distribution and as to merchandising practices.

The manufacturer who has sought access to the market for electrical products has ordinarily pursued the traditional and, what to his mind, was the logical course. That is to say he has approached the established jobber. Not infrequently the jobber has proved difficult to interest in a new product, whether new to the electrical world or new to the region which he served. The jobber, naturally, is not inclined to take on new and unknown products for which no market has been created in his locality, particularly so when already he has in stock standard goods that are nationally advertised and firmly established with the trade. Whether for this reason, or for others equally effective, the jobber has not been interested in backing the product of the new manufacturer and the latter has departed from the presence of the jobber determined to break into the market somehow—through a jobber if possible, but if not, then some other way. If no established jobber can be enlisted, then recourse is had to some jobber who is just growing out of the retail into the jobbing phases of the business. Such a jobber is apt to do business along somewhat unconventional lines. He is more than likely a bit irregular in his methods and he may not stand well with the established and regular concerns engaged in manufacturing and distributing electrical products.

It may well be that such a jobber can not be found. If not, then the manufacturer may be confronted with the problem of creating a jobber. This may be accomplished by converting a retailer into a jobber, hence it is not uncommon to find concerns doing both a retailing and a jobbing business. The

latter phase of the business is at first confined to a few lines, but the tendency is to expand in the jobbing field and allow the retail end of the business gradually to expire. It is needless to say that such jobbers are not in a position to function as jobbers and provide all the services that jobbing traditions call for. One need not stop here to explain that such a jobber must, by the very nature of his situation, resort to methods that his older competitors have long since abandoned as unethical and irregular, for these matters are for present purposes quite beside the point. The fact is that new jobbers have been created by the force of competition among manufacturers for access to the market. In turn, these new, so-called jobbers have made their competition and methods felt by the older and well established jobbing houses. The force of this competition then leads both old jobbing houses and new ones to extend their contacts with their retail outlets. In consequence, both groups of jobbers have extended credits and placed goods in the hands of a multitude of individuals who are collectively referred to as contractor-dealers. Jobbers have encouraged these contractor-dealers to believe that they could merchandise electrical products, particularly appliances. The contractor-dealers have been confirmed in this point of view because of the comparative ease with which they obtain credit for the purchase of goods from jobbers.

The Contractor-Dealer as an Outlet

It is difficult to understand what relationship, if any, exists between the function of an electrical contractor and that of a merchant. On the other hand it must be remembered that electricity is a highly technical subject and that household appliances meet a high sales resistance because the housewife does not understand them and consequently views them with suspicion and distrust. It is not surprising therefore that the shop of an electrical specialist should be a natural point of contact between the housewife and the electrical industry in pioneering new devices and will continue to be so until electrical heating appliances gradually obtain the same consumer acceptance as those using coal, wood, steam or gas. The problem of servicing appliances already in use is another factor to be considered. Not a few are functioning effectively but their chances of success are affected by the fact that they must compete with many who can not exist except by methods upon which sound retail distribution of electrical products can never be developed. In an over-crowded field methods of distributing become highly disorganized and merchandising practices adjust themselves to standards which are disastrous for the electrical industry as a whole.

It may be said, with some measure of justification, that existing conditions are transitory. Perhaps they are the outgrowth of the present phase of the business cycle and the brief period of prosperity which has been ours since 1920-21. With the coming of adverse balances in our foreign trade and the movement of gold out of the country we may expect, in the not very distant future, a period of declining prices and a general slowing down of business. It may be that the distributive system for electrical products will function adequately during a period of quietude in business and many of the fly-by-night concerns that have come into being with the building boom will disappear almost as rapidly as they have appeared. However these things may be, it is a fact that in the period of expanding business the pressure on the mechanism for the distribution of electrical products has shown serious weaknesses. The pressure upon it has been more than it could bear and we have as a result the present condition with its numerous irregularities, its unethical practices, its lack of vision in merchandising, its refusal to recognize that a lasting business cannot be built on a temporary foundation. The electrical industry as a whole can not come into its own with such conditions prevalent.

Necessity for a Strong Foundation

The recognition of this fact is the ground for study that constitutes the basis for this series of articles. The electrical industry must be developed along such lines that the foundation will prove equal to the future development. The expansion of the electrical industry must be such that it will not be necessary to back up and rebuild this foundation. Furthermore, development of the industry must lead into no blind alleys. These are the matters with which the brains of the electrical industry must concern themselves. The electrical industry must be developed along lines harmonious with the economic organization and development of the entire country. Nothing else will survive.

For present purposes it is desired that the reader shall grasp the fact that the electrical industry as a whole is not functioning as it should. This condition is nation-wide, though it may be admitted to be more acute in some sections than in others. We may as well face the fact and try to analyze those conditions which have brought this to pass. Only a clear vision of the underlying causes will make it possible to work out a solution of the existing problems of the electrical industry. The Pacific Coast is no exception to these conditions. Here, as in other sections of the country, we have manufacturers who are so determined to find a market for their products that they are not over-scrupulous as to just how they do it. We have jobbers who do not know the first principles of jobber merchandising nor the functions which the jobber that really jobs must perform. We have a type of contractor-dealer who lives by reason of the unsound business methods of over-eager jobbers, thus persisting where they ought to be eliminated for the good of the industry as a whole.

In recognition of these conditions we have another type of manufacturer, jobber and contractor-dealer that realizes where such conditions will lead, calling into play every method within their power to combat these evils that threaten the welfare and future progress of their industry. There are able men in the electrical industry on the Pacific Coast and many of them are studying the situation there and elsewhere with care. It is by no means the intention of the writer to indicate that conditions on the Pacific Coast are hopeless. They are about as good and as

bad as elsewhere. Some of the excellencies of the electrical market in general are more highly in evidence there and some of the evils are, perhaps, more prominent there than elsewhere. These will be dealt with more intimately hereafter. What has been said here is for the sole purpose of making clear just what conditions obtain within the electrical market as at present organized on the Pacific Coast. These facts constitute the general background which must be kept in mind in approaching the subject of distribution in that territory.

Direct Distribution

Let me say that there is a well developed market for electrical products on the Pacific Coast. It is a market of respectable proportions. It is an expanding market with an assured future. A manufacturer new to the Pacific Coast can reach it by (a) establishing his own distributive system from first to last, or, he can (b) use the distributive system that has been erected there. With respect to the former let it be said that it is a question whether any manufacturing company, however powerful, is in a position to establish its own factory branches, warehouses and retail outlets. There would be, of course, distinct advantages in this plan. The foremost is control of distribution. Control of distribution means something in a confused market. Among other things it means (1) perfect co-ordination of sales policies with consumer demand, (2) it means that goods sold over the counter will be properly priced, (3) service work essential to expansion of good-will can be rendered more effectually, (4) substitution can be avoided, and (5) the tastes of consumers can be studied firsthand. Thus (6) improvements in the product and (7) new and strong sales arguments can be developed. A sound knowledge of retail costs and problems can be obtained. These advantages are definite. They spell efficiency and they are worthy of effort, but they cost a good deal. Nevertheless certain manufacturing companies have found it advisable to control every phase of distribution. Such widely different concerns as The Library Bureau, A. G. Spalding & Bros., and the National Cash Register Co. engage in distribution right up to the ultimate consumer. The National Cash Register Co. finds it essential to maintain agencies of distribution, independent yet closely affiliated with the company, for the sake of service. Certainly the servicing of cash registers is not more essential than the servicing of appliances. It must be stated however that none of these concerns is marketing household appliances. There is a vast difference in catering to mercantile establishments and homes. Every possible advantage through the operation of adequate retail outlets is needed by the electrical industry today and needed badly.

However great the advantages of owning retail outlets, it is out of the question for the average manufacturer of electrical products. Still, it does no harm to bring these matters to the reader's attention. The average manufacturer of electrical goods must avail himself of the existing mechanism of distribution. The good and bad in this mechanism must be taken together. In view of this fact, when the manufacturer faces the Pacific Coast electrical market, what kind of distributive system will he find?

Aspects of the Pacific Coast Market

There are certain outstanding aspects of the electrical market in the Pacific Coast territory. (a) The old, nationally advertised and standard lines for the most part are getting good volume of sales direct through established, regular jobbers. (b) A considerable number of high-grade lines and many new and less well known lines are reaching the market through manufacturers' agents. They play an interesting and significant part in the processes of distribution, selling through jobbers where they can, but selling none the less. (c) The key to an adequate understanding of electrical distribution in Pacific Coast territory is to be had only with a thorough understanding of the position of the jobber. (d) The relation of central stations to the existing methods in marketing and merchandising and to other factors in the electrical field must be grasped before Coast electrical problems can be rightly understood.

In addition to these facts it is essential to point out (a) that there is a strong fraternal spirit among electrical distributors of all sorts in the Pacific Coast territory. This spirit is a factor in the success of an individual distributor or concern. (b) Add to this the fact that there is a political propaganda for public ownership of utilities and you have an element in the situation with certain ramifications not to be overlooked. (c) The men engaged in distribution of electrical products are very much alive to this situation, in fact they are in general very much alive to everything that relates to electrical products and their distribution. They know their territory and the market. (d) Let it be said that the electrical market is dominated by distributive organizations which radiate from a few large centers. The distances between these centers are great, from the point of view of an eastern manufacturer, but this is of little consequence when the center of operations for a given organization is strategically correct and well captained. (e) Finally, it is important not to overlook the fact that the distributing organizations now in the field fall into two fairly distinct groups. There are certain powerful jobbing organizations with equally powerful affiliations. All other jobbers with their affiliations fall into the other group. What the latter thinks and does depends a great deal upon the activities and policies of the former.

With these facts in mind consider also that the market is organized and functioning. To be sure it functions somewhat imperfectly. There is some lost motion and some friction; pronounced at some times and less so at others, but even so a grasp of the very irregularities and complexities is not difficult. They center around certain well defined tendencies which are logical and natural components of any system of distribution no matter how excellent. That there is some confusion in the electrical markets of the country as a whole, and hence, in the Pacific Coast territory is certain, but there is a certain orderliness in the very confusion.

California's Opportunity and the Utility's Responsibility

By R. H. Ballard
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CALIFORNIA and the rest of the western states have been re-discovered. In agriculture, in industry and in living conditions, the West is a land of golden opportunity. In the caravan of progress the hydroelectric utilities are marching in the lead. They are seeing that growth is not retarded for lack of power. A part of their obligation is building for the future and they are making their plans not for tomorrow, but for fifteen years ahead. In this article Mr. Ballard points out some of the responsibilities of the utilities which must not be overlooked if they are to maintain the enviable position in which the pioneers of the industry have placed them.

ON every hand there is evidence of the concerted effort being put forth by our best citizens to increase our industries and to improve our commercial structure. From the Chamber of Commerce in a small community to extensive movements such as the All Year Club, Californians, Inc., and the California Development Association, we find this invitation being voiced, "Come to California, wonder spot of the world, blessed by a benign climate, rich in natural resources, convenient to foreign markets and with abundant electric power for every requirement."

Never was a honeymoon couple, preparing for the first dinner guests, so busy as is California in her capacity as prospective hostess to the millions who are planning to make this western commonwealth their home.

In any of these organizations we find men of radically different social, political and religious views, but in their opinion of California's greatness they are unanimous. That this opinion is correct is demonstrated as each new proselyte immediately becomes an evangelist, in turn telling his eastern neighbors of the happy and prosperous existence that awaits them here.

A new factory is built in Oakland, a new steamship line comes to Los Angeles, a mill is started in Fresno, a packing house is established in Watsonville. In each case the Chamber of Commerce celebrates and the newspapers welcome the stranger in truly western style. All of which is just as it should be.

But sometimes they overlook an element that makes this rapid absorption of new people possible. The climate, the natural resources, the marine highways have been provided by a Providence which also supplied our source of power, but left it for man's ingenuity to release. Lumber for factories and concrete for piers may be obtained on comparatively short notice, but power, which takes such a prominent place in all these invitations, requires years of precise thinking in advance of its actual production.

It was Roosevelt who said that only a handful of men in America could think internationally. This might be paraphrased to read, "Only a few men can think fifteen years ahead of their time." In this latter class we must place such men as Britton, Huntington, Miller, Wishon and those others whose clear thinking and inspired vision produced the present power systems which are California's pride and one of her most substantial attainments.

Retrospect is useful only as it aids in prospect. Years of success along established lines at least suggest that future action along similar lines will be sound. The banker knows what percentage of an appraisal constitutes a safe loan. The farmer knows the relative values of wheat and alfalfa. The department store manager knows the whims of style. And by the same token our utility executives know probable peaks and what will be necessary to meet them.

This brings me to a brief discussion of California's opportunity and the utility's responsibility in its realization.

The first public utility, whenever and wherever it may have existed, did not have any noticeable effect on the sum total of the world's affairs. But as our life has become more complex and all of our relations more interdependent, there has gravitated to the shoulders of the public utility an obligation as definite as that resting on the courts or the medical profession. Day by day this obligation becomes heavier, thus calling for still greater achievement on our part. Yesterday's "good" is today's "fair," while tomorrow's "excellent" is beyond the conception of some minds.

Turning for a moment to the Southern California Edison Company, we note that in the technical field it is operating at 220,000 volts; in the public relations field it has evolved the Department of Greater-Service; in the financial field it has obtained 63,000 stockholders—each a distinct achievement yet causing little comment soon after it is realized. What will be the transmission voltage, what the refinements of public relations, how many stockholders will there be fifteen years from now?

Each step is in the interest of California's progress. Each advancing move increases our responsibility and calls for a finer texture in our personnel.

California's opportunity seems boundless. With one-third of our area, the island of Java cares for a population of 35,000,000.

Each succeeding year will see greater influxes of new people, lured by the charm of our state and entitled to a square deal. It is California's opportu-

nity to provide for their physical needs and cultural desires.

No great forethought is necessary to arrange for the distribution of groceries and clothing in a new community. That orchard, which in 1930 is to be a bustling town, will have its stores, hotels, garages, schools and churches in due time. But if it is to have ample electric service, the surveyors must be working in the mountains right now—laying out dams, tunnels and powerhouse sites.

The Western Utility's Responsibility

Herein lies the peculiar responsibility of the electrical utility company in the West. We must go so far afield for our power that the time element is remarkable. Active construction work ranging from two to six years, accurate planning for a period of fifteen years and general planning looking fifty years ahead—these are the schedules that our executives, engineers and financiers must meet.

Obviously, such a schedule does not allow any experimenting. Sudden changes in policy or management would be disastrous. It is only by the persistent following of the path shown by past experience to be right that our progress is sure. By this I do not mean that we never adopt new ideas. On the contrary, we are alert to discover new methods which will be beneficial. But in adapting them it is important that our fundamental economics be not disturbed. At all times the delicate balance between planning and building, financing and marketing must be maintained.

Only by a policy sufficiently broad to contemplate a fifty-year program, administered by men of experience, judgment and vision can the responsibility of the electrical public utility be met. Consumer-ownership, state regulation and private management is the only combination that meets this situation adequately.

It is important that we build with both hands. Some illogical persons would assist California's progress with one hand and hamper it with the other. The full realization of the Golden State's opportunity will come only through sympathetic cooperation among all its constructive elements, not the least of which are its electric public utilities.

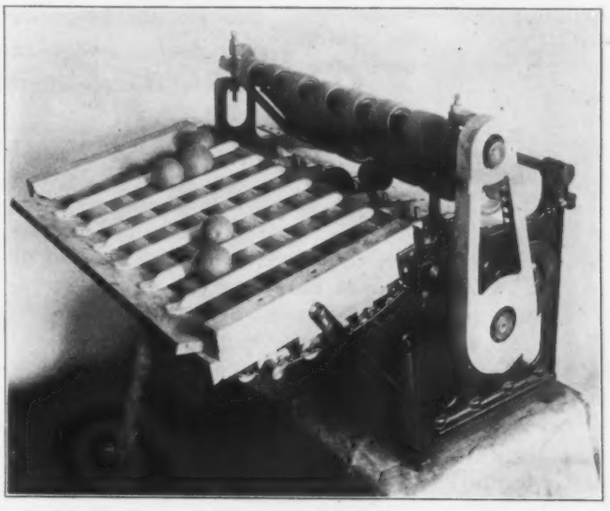
With past experience to guide them, with the vision of its leaders to inspire them, with the confidence of the public to assure them, our electrical utilities accept the responsibility for providing adequate power service in California at all times—welcoming constructive criticism and marching steadily forward with the full knowledge that right always prevails.

Electric Fruit Marker Prevents Quality Substitution

ANOTHER application of electricity for which California is responsible and which has been developed entirely within that state is the marking of fruit. The machine for this purpose is an ingenious device and is the conception of L. Neueuschwander and F. Ahlburg, both of Los Angeles.

The machine first heats the surface of the fruit sufficiently to warm the natural wax and then imprints the design upon the heated portion. The heating device employed is of 1 kw. capacity and the machine is driven by a ½-hp. motor. After the apparatus is thoroughly heated up the heating load is automatically reduced to 500 watts, control being by means of a thermostat of special design set at 320 deg. F.

The machine is placed between the grading belt and the sizing machine in the packing house. Fruit rolls off the grading belt and onto the escalator of



Electrically heated and operated machine which automatically brands oranges and other fruits thereby preventing unethical trade practices.

the marking machine. It is then carried to the star wheels which carry the fruit over the dies which operate at a temperature sufficient to accomplish the warming of the wax. The dies are in turn contacted with an inked ribbon and carry the ink to the fruit, branding the surface at the heated point of impression.

This machine has already been adapted to the marking of cantaloupes, watermelons, etc., and is in extensive use. One very great advantage of the use of fruit branding machines is that it absolutely prevents the substitution of inferior grades of fruit for the well-known and extensively advertised brands. For marking oranges the machine is particularly desirable and in Florida alone over 100 are in use and many are also employed in California. The machine is controlled by the Electric Fruit Marking Company of Los Angeles, Calif., who operate on a royalty basis.

This device may also be used for marking apples and has been tried out successfully for this purpose. Lemons, which have a very delicate skin, have also been successfully handled and the field of application seems to embrace practically every fruit which it may be desired to brand. By the use of this electric fruit marking machine growers and packers are enabled to tie in the national and local advertising of brands with the actual sale of the fruit itself.

Christmas Sales Plan of the California Electrical Cooperative Campaign

MR. Eltringham has evolved a plan which should not only stimulate Christmas appliance sales but should also serve to promote continuous buying of these devices. This plan should take out the "sales valley" and should be productive of increased turnover, with consequently increased profits from dealers' electric appliance business.

THE electrical appliance business of the past has developed more or less by itself and in somewhat haphazard fashion. There has been very little, relatively, of systematic planning for definite and continuous sales plans. Sales effort has been spasmodic and individual. The most saleable merchandise and that which offers the utmost in comfort, convenience and safety for every family has been sold by its own inherent desirable qualities and rarely through intelligently directed design. Sales volume, therefore, has been spotted or seasonal with attendant carryover of unsold stock. While this carryover has not always, and perhaps not often, been a serious matter, owing to judicious and discreet buying, it has nevertheless existed and has not been conducive to healthy merchandising. It is rapidly being recognized that turnover, and not discount, to a very large extent determines profit and that, therefore, a heavy carryover reduces profit through reducing turnover.

Consideration of this phase of merchandising is justly coming to the fore and Robert L. Eltringham, manager of the California Electrical Cooperative Campaign, has evolved a plan which will doubtless assist in leveling the peak of merchandising and in filling in the sales valleys of the dull months. The plan really embraces two or three separate parts. Primarily, it starts out with the Christmas season and emphasizes the value of electrical gifts for Christmas presents. Special advertising material has been prepared for that season and will be of an unusually attractive character. The general note of the publicity will, of course, center about the idea of Santa Claus and Christmas giving and the material to be supplied to dealers, jobbers and central stations will make possible the most attractive of window and store trims. This material will include large wreaths in the center of which will appear the words "Give Electrical Christmas Gifts," cut-outs of Santa Claus 12 in. high, with the hand pointing to the right, left and center, and slips on which are printed slogans urging the purchase of electrical Christmas gifts.

These slogans will be several in number and among others will be such as these: "Crisp Toast Made Right at the Breakfast Table"; "Superior Coffee Made at the Table in an Electric Percolator," etc. The general plan of the window trim is to have the large wreath in the back center of the window and to put the various appliances on display. The slogans will then be pasted on the inside of the window with red ribbons leading from each slogan to the device which it advertises. The desirability and the useful comfort of the device will in this way be forcefully presented and this will without doubt serve to increase the sales of electrical appliances. This material has been prepared in large quantity and is available to every dealer who sells electrical appliances.

To tie in with the dealer advertising, the Campaign has arranged with motion picture theaters throughout the state for the showing of colored lantern slides of attractive design. These slides will be in the holiday colors of red and green and will stress the usefulness of electrical appliances and their application as Christmas gifts. This is a costly form of advertising but through the theaters which have been selected it is expected to reach more than three million people within a space of two weeks. It is planned to furnish the window trim material to central stations, jobbers and dealers and thus to obtain the greatest possible publicity. It will therefore be seen that dealers by adopting the material furnished and by making good use of it in their window and store trims will reap the benefit of concerted effort and planning and will take part in a general movement for the increased turnover of electrical appliances.

The second part of the plan is the annual "June Brides' Week" which has already been made a custom by the Campaign. This will be repeated as usual the first week in June and special advertising material is now in preparation.

The third feature of the plan is that it is proposed to extend the effort throughout the entire year and one of the slogans to be used will be "Make Christmas last throughout the year," the idea being that electrical appliances may very well be given at any time and that Christmas is not the only period of the year when such devices are acceptable.

By spreading the message of electrical utility throughout the year it is expected that not only will seasonal sales be increased but that the usual sales valley will be eliminated and that volume, and consequently turnover, will be materially increased.

Inasmuch as turnover, to a great extent determines profit, dealers should benefit materially by the application of this plan to their individual business. This will result in the increased sales of appliances at other than holiday seasons and should work to produce a much more satisfactory balance sheet at the end of the year. This entire publicity program will be spread over the whole state and dealers who tie in with it will reap the benefits of cooperative effort.

SOME of the Christmas advertising material prepared by the California Electrical Cooperative Campaign for distribution to dealers in electrical appliances. The large wreath makes an excellent center piece for window trim and the card in the lower right serves well for window and counter display. The illustration in the upper left shows the cover of an attractive booklet descriptive of electric appliances. All of this material is in the regular Christmas colors of red, green and white. The slogans also furnished for attachment to the window are similarly colored and are of unusual sales force.

Changes in the National Electrical Code

By Claude W. Mitchell
Electrical Engineer, Board of Fire Underwriters of the Pacific, San Francisco, California

THE third in a series of articles by Mr. Mitchell outlining the changes and revision in the 1923 edition of the National Electrical Code. In this article numerous changes of importance to contractors are outlined and detailed information is given relative to protection and protection devices.

THERE are certain sections of the National Electrical Code to which the majority of electrical contractors and workers have found it necessary to refer very infrequently if at all. For that reason these will be omitted from the 1923 edition and published by the National Fire Protection Association in other pamphlets containing additional rules and data pertaining to their respective subjects. The rules to be omitted from the new Code are those formerly found under the headings: Car Wiring and Equipment of Cars, Car Houses and Marine Work.

Continuing the discussion of the rules which have been changed, the following will deal with them practically in the order in which they were to be found in the 1920 edition and unless otherwise noted the numbers given are those assigned to the rules of that Code.

Protection of Generators

Rule 1-d, outlining the protection necessary for generators, has been amended so that in central stations where the type of apparatus used and the nature of the system operated makes protective devices inadvisable and unnecessary, their omission may be permitted by the inspection department.

Grounding of Motor Frames

The new rule replacing 8-a distinguishes between permanently located and portable motors with respect to grounding of frames. It is recommended that the frames of portable motors which operate at less than 150 volts be grounded when this can be accomplished readily. The rule provides that the frames of portable motors which operate at more than 150 volts shall be guarded or grounded.

High-Potential Motors

As worded, the old rule, 8-b, seemed in a way to discriminate against the high-potential motor. The new rule has corrected that fault and also raised the voltage limitation by inserting the words "to ground" after the word "volts." It reads: "Motors operating at a potential exceeding 2,500 volts to ground shall not be installed elsewhere than in central stations, substations and generator and motor rooms." This will permit without special enclosure the operation of motors receiving current direct from 4,000-volt star-connected distribution systems, which have been adopted as standard by many power companies.

Protection of Motors and Motor Circuits

The new rule recognizes thermal cutouts and overload relays for motor protection. A change is made to provide for protection only in ungrounded conductors. In keeping with those made in the 660-watt rule, consistent changes have been made in the rule relating to grouping of small motors under the protection of a single set of fuses. The fuse limitation has been raised from 10 to 15 amperes and wattage of the circuit from 660 to 1,200. Besides raising these figures, the rule also provides for grouping of motors protected by thermal cutouts as follows: "Motors may be grouped under the protection of a single set of fuses provided the rated capacity of the fuses does not exceed 15 amperes and the total wattage of the circuit does not exceed 1,200, or provided each motor is protected by thermal cutouts. The number and size of the motors grouped with thermal cutout protection need be limited only by the maximum size of the fuses with which the thermal cutouts can be safely used and each thermal cutout shall be marked to indicate the size of this fuse."

The paragraph following the table in rule 8-c specified certain conditions under which fuses are not required in addition to circuit breakers. The new rule adds that they will not be required where next back on the line there are fuses rated or a circuit breaker set at not over 300 per cent of the motor nameplate rating.

In addition to the requirements outlined in rule 8-c(1) for motor protection the new rule will specify that if an overload relay is used, its rated capacity shall not be exceeded when the motor it protects is carrying 110 per cent of its continuous current capacity as indicated on its nameplate. The second fine print note under this rule has been stricken out and a new paragraph added which is as follows: "Where the motor running protective device is shunted during the starting period the motor and the portion of the motor branch circuit between the motor and its running protective device shall be considered sufficiently protected during the starting period by the next overload protective device back on the line if the rating of this fuse or the setting of this circuit breaker is not over 300 per cent of the motor nameplate current rating." This rule definitely establishes a limit for size of fuses or setting of circuit breaker for the condition specified.

The first paragraph of the old rule under the heading "Size and Protection of Conductors of Motor Circuits" specified a minimum carrying capacity for conductors carrying the current of only one motor. The new rule does not change this minimum but provides that the actual sizes are to be determined by the rating of the fuses or the setting of the circuit breaker or overload relay protecting them. An addi-

tional rule provides that automatic overload protective devices may be omitted at the point where conductors carrying the current of only one motor are connected to the mains, provided their current carrying capacity is at least one-third that of the mains, the length of the conductors between the mains and the motor protective devices is not greater than 15 feet and they are suitably protected from mechanical injury.

An amendment has been made which allows the same current carrying capacity for varnished cloth insulated wire that is permitted for rubber-covered wire carrying the current of only one alternating current motor.

Motors in Dusty Places

Rule 8-f has been enlarged upon to outline more definitely conditions under which motors shall be of the totally enclosed type or placed in enclosures, and contains a little more information regarding the type of enclosure required.

Services

The new rule provides that all service wires shall enter the building at a point as near as practicable to the location of the service switch. This emphasizes the old Code rule (24-a) which requires the service switch to be located in the nearest readily accessible place to the point where the wires enter the building. This old rule is not eliminated in the new Code. Its retention and the new rule just cited will require that consideration regarding the location of the service switch be given both in laying out the interior wiring and in running of service wires. The new rule on services also goes a step further than the old in recommending that conductors entering buildings from overhead lines be run in rigid metal conduit. When so run the service fuses may be located at outer end of service conduit. When the service fuses are so located or are locked or sealed, duplicate main fuses or branch fuses connected on the load side of the meter and enclosed in an approved casing or cabinet, so as to be readily accessible to the occupant of the building, shall be provided.

Trolley Wires

Rule 12-i of the old Code has been stricken out and minimum size for trolley wires is not specified.

Constant-Potential Pole Lines

No change is made in the rules for constant-potential pole lines of over 5,000 volts except to add the recommendation that rules of the National Electrical Safety Code, part 2, be followed.

Switches

The first paragraph of the old Code rule 19-a, insofar as switches are concerned, has been amended to read as follows: "On constant potential circuits, all service switches and all switches controlling circuits supplying current to motors or heating devices, unless otherwise provided in this Code, shall be so arranged that the opening of the switch will disconnect all the **ungrounded wires.**" One of the exceptions is that the switch blade in a grounded conductor shall not be omitted for switches controlling heating appliances of more than 10 amperes or 1,200 watts total capacity.

In the case of a service switch a blade will be required in the grounded conductor unless the switch is enclosed in an approved cabinet and other means provided within the cabinet for disconnecting such conductor. It is recommended that the service switch be of the externally operable type and unless it is of this type additional switches shall be provided for control of individual circuits in compliance with the recommendation that where the current of a single circuit, or group of circuits, is separately metered, as in apartment house installations, a switch and cutout be installed to control such separately metered installation, the switch and cutout being enclosed and the switch being externally operable. The location of this switch and cutout may, or may not, be close to the meter.

The provision that the switch controlling a separately metered load may, or may not, be placed close to the meter will allow grouping of meters in an apartment house installation and placing of switches within the apartments themselves. This may be very desirable at times when space allotted for meters is small and, also, it allows the switch controlling each apartment to be placed where it may be readily accessible to the occupant.

Single-pole switches shall not be placed in any neutral or grounded wire. Therefore care must be exercised in placing single-pole switches in one conductor of a two-wire circuit to be certain that the grounded conductor is not disconnected by the switch. In other words, the switch shall be placed in the ungrounded lead to the outlet or device which it controls.

The old Code stated that three-way switches are considered as single-pole switches and the new rule settles an ofttimes disputed point by adding that "they shall be so wired that only one pole of the circuit will be carried to either switch."

Motor Switches

The rule for motor switches has been amended so that, except for crane motors, the controlling switch need disconnect only all of the ungrounded motor leads. The old rule required that all leads be disconnected by the controlling switch. Additional specifications for the motor switch are to be found in the new Code as follows: "The motor switch shall have a continuous duty rating at least equal to the current-carrying capacity of the wires between the motor and its running overload protective device, and it may be of the disconnecting type if it is not intended to be operated under load and is so located or locked that it cannot be readily operated by unqualified persons."

Heating Appliances

The old rule permitting the use on branch lighting circuits of heating appliances each of 6 amperes or 660 watts or less still stands but attention is called to the recommendation referred to in the last article which is as follows: "Receptacles for attachment plugs (convenience outlets) are strongly recommended in order to facilitate the use of electrical appliances which, otherwise, must be connected to sockets designed primarily only as lamp holders."

In conformity with the 15 ampere limitation placed upon branch circuits the rule referring to heating appliances has been amended so that if they have a capacity each of 10 amperes or 1,200 watts or less they may be grouped on a special circuit protected by fuses having a rated capacity not greater than 15 amperes. Each complete heating appliance, whether containing one or more heating elements, which is of more than 10 amperes or 1,200 watts total capacity, shall be supplied by a separate branch circuit. Subdivided circuits of a heater need not be separately fused.

Metal Raceways

The rule limiting to 1,320 watts the circuit capacity of wires run in metal raceways has been amended by placing the maximum capacity limit on fuses protecting such circuits at 20 amperes at 125 volts or 10 amperes at 250 volts.

Unusual Photo Presents Importance of Illumination

By Joseph O. Hickox
Mt. Wilson Observatory

GENERALLY speaking, people are apt to take for granted the benefits and privileges of modern life. They are so accustomed to the provision for the every-day necessities that they no longer appeal to the imagination and their importance is frequently overlooked in the rush incidental to their present day life.

One of the most important of all necessities is light. Millions have been invested that people might have it, more millions have been devoted to improving its quality and adaptability and to furnishing it to the public at moderate cost. The extent of this research is overlooked and lost sight of in the acceptance of illumination as a birthright. The dependence which is placed on illumination is scarcely thought of, for the remarkable continuity of service now provided by the various utilities gives practically uninterrupted enjoyment of this blessing. Only occasionally is thought given to the value of artificial illumination and its application to the preservation and protection of human life.

What this means to the individual, apart from the spectacular, can hardly be written for in those lights and on their unfailing source, is placed the dependence for safety of all of the millions of human souls beneath their rays. Not only safety but comfort as well is carried forth by each light beam and industry and home alike rely upon the glittering lamps. Without these lamps there could be little of comfortable home life, little of amusement, only restricted merchandising and very questionable safety of the individual.

From an engineer's point of view this is also an extremely interesting matter as it involves many engineering and construction problems worthy of note. The mere physical lay-out is perhaps the simplest of these and merges into the technicalities of generation, transmission and distribution as well as the proper application of energy at the point of consumption. The energy consumption is staggering in its proportions.

The photograph above was taken from the summit of Mt. Wilson on the night of Oct. 1, 1922, and covers a triangular area approximately forty miles on a side within which area are located more than a million people. The cities seen herein are Pasadena, which is directly at the foot of the mountain and at the right Los Angeles, stretching out into its environ Hollywood. At the extreme upper right are to be seen the beach towns of Santa Monica, Ocean Park and Venice, followed to the left by El Segundo, Redondo Beach, San Pedro and a portion of Long Beach, which is at the extreme left of the picture. On the horizon, in the left portion of the picture, is Catalina Island with Avalon showing as a dim patch of light near the left end. This point is seventy miles, air line, from where the picture was taken. Lights on battleships, anchored in the harbor between San Pedro and Long Beach, may be seen as may also the lights of street cars and automobiles which appear as streaks of light joining the various cities.

The above photograph, obtained by means of a two-hour plate exposure, shows the importance of illumination to more than forty cities and towns in southern California. The view is from the top of Mt. Wilson and takes in points as far away as Catalina Island, over seventy miles air line from the camera.

Making the House a Home

By Vere Crockwell

Advertising Department, Southern California Edison Company

ELECTRICAL equipment as a work of art is taking the place of the "wiring job" in California's fine new homes. Of these, one of the most unusual is the home of Otto Meek in Flintridge, near Pasadena, which is a luxurious house of Spanish design, expressing the utmost in modern convenience and comfort.

In showing me his home, Mr. Meek said, "We planned electrical equipment as a part of each room, instead of purchasing fixtures and wire. As we studied the plans our constant thought was 'What

Electricity is so skillfully employed in this home that one feels its influence without realizing its presence.

electrical device will add to our enjoyment of this particular room?' The result has been extremely satisfactory."

As each switch, outlet, light and appliance was shown I could not help thinking of the unnecessary stumbling, fumbling, stooping and stretching that is endured by other people abundantly able to have real electric service but ignorant of its varied applications. In Mr. Meek's home every fitting is located precisely in the spot that one would touch instinctively when service is desired.

Even temperature throughout the house is regulated by a series of wall buttons. "We call them keys to comfort," my host explained. "There is no furnace smoke to damage oil paintings and furnishings, nor obtrusive radiators to mar decorative effects."

Convenience outlets accommodate floor lamps and I observed that the rich lighting on several paintings came from small lamps concealed in the moulding. In the bedrooms are convenience outlets for reading lamps, heating pads and curling iron, while the bath rooms are equipped with hair dryer and an outlet for any needed appliance. A serving table in the dining room proved to be an electric warming table and here also convenience outlets had been installed for the ready connection of the percolator, samovar or chafing dish.

Novel lighting makes the kitchen in this house especially convenient. China closets, kitchen cabinet, shelves, drawers and bins are each equipped with a lamp which eliminates all dark corners—even the electric stove has a lamp in the backshelf which I learned is invaluable when the light from the center of the room is insufficient. An electric dish washer does the worst of the kitchen work. In the kitchen there are also outlets for a variety of appliances including a tiny motor which polishes silver, turns cake and bread mixer, and performs innumerable little tasks. The laundry is entirely electrical, having a washer, an ironer, a wringer and an extra outlet for an iron, heater or fan.

"Electricity has solved our refrigeration problem," Mr. Meek said. "Not only has it eliminated the ice service nuisance, but we find that the dry cold of electrical refrigeration is more sanitary and keeps foods in better condition."

As we stepped outside, my host showed me a fine wire which followed door frame and windows. "The receiving line for burglars," he explained.

Last came the patio and garden, arranged for lighting on festive occasions. Lamps of amber, blue and red are concealed in the fountain to respond at the touch of a button and lend a "Maxfield Parrish" effect to the scene and in an oak tree near the entrance, hung a rustic lantern to light the driveway. Truly, the precedents and traditions of the wireman have been shattered in this instance.

Planned by a man who worked out his problems as electrical needs suggested themselves, this house is an example for hundreds of better homes being built everywhere. Such homes offer a comparatively new field to the electrical industry,—that of equipment as an art instead of a "wiring job."

The joy of life as typified in the Spanish architecture has been enhanced in this home by the generous and judicious use of electricity.

The work of architect, contractor and electrician is each of vital importance to the other. Like Mr. Meek, people are building "homes"—not merely "houses" and the homebuilder wants the best of equipment. Heat, refrigeration, lights in unusual places and outlets to accommodate appliances are being considered as never before.

The COAST Outlet
ELECTRICAL CONSTRUCTIONISTS' and DEALERS' NEWS

Electrical Construction

By E. Earl Browne

MANY of the modern schools, particularly high schools, are very complete electrically as they are not only designed to provide class-rooms, but also auditoriums for district public gatherings. Many of these modern buildings also contain gymnasiums which are designed with galleries for public exhibitions of drills, gymnastics, hand ball, tennis, etc. This fact necessitates a complete layout of lighting equipment and apparatus for controlling it. Provision must also be made for heating and ventilating. Provision should be made for a complete stage equipment of footlights, striplights, pockets for floodlights, dimmers, dressing rooms, etc.

To provide the proper installation, the electrical constructionist must be thoroughly conversant with the requirements that the electrical equipment will be called upon to meet. Ample provisions must be made for the correct illuminating of the auditoriums and other gathering places and in addition to this a complete and modern control system must be provided if the job is to be one that will serve the users satisfactorily and one that will react to the advantage of the contractor.

Because the school auditorium is no longer just a place where the students gather, but is a location which is utilized by public gatherings of the citizens of the community, the care and thoroughness with which the electrical contractor does his work, will be shown to the responsible citizens of the city.

Next in importance to the proper installation, is the provision for the controlling of the electrical equipment that has been placed in the building. Because of the fact that the auditoriums and other gathering places are used at night, provisions must be made for illuminating these rooms and the corridors leading to them during any emergency.

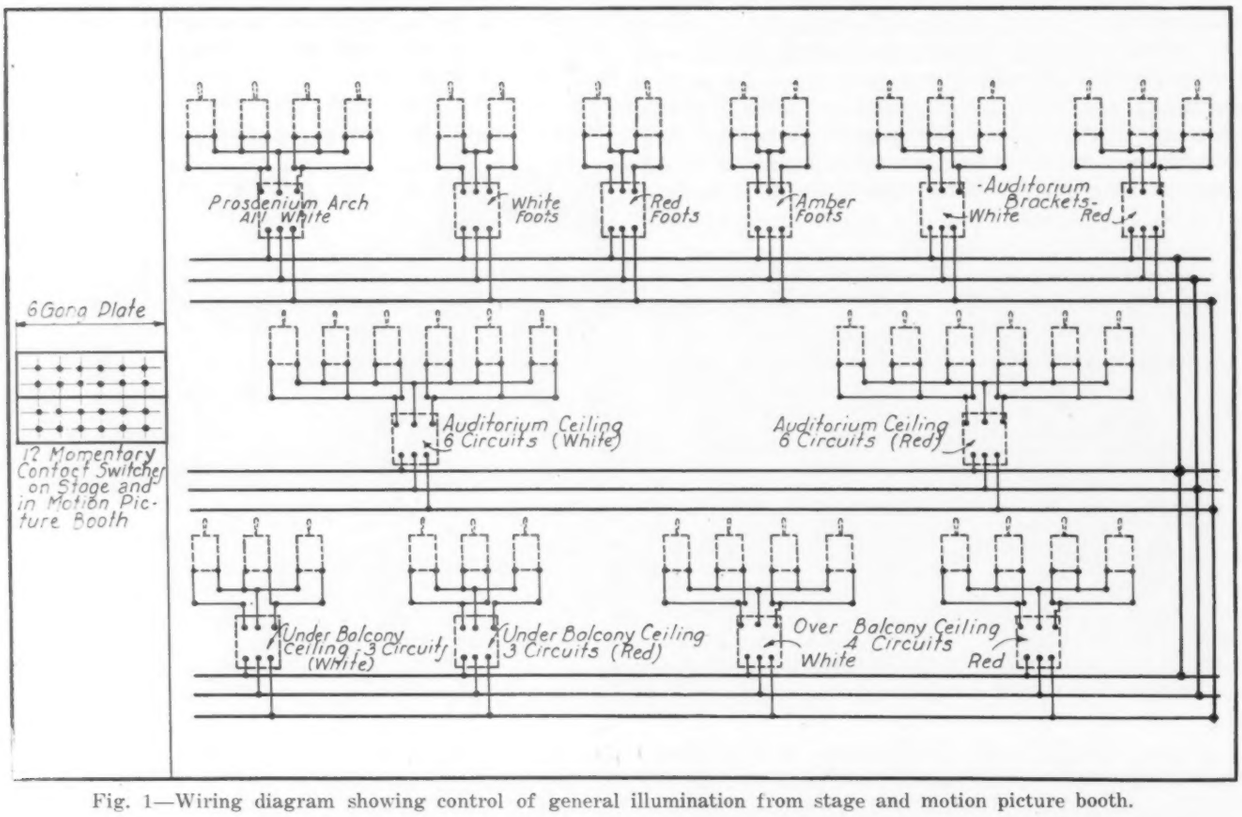

Prosdenium Arch All White
White Foots
Red Foots
Amber Foots
Auditorium Brackets- White
Red
6 Gang Plate
12 Momentary Contact Switches on Stage and in Motion Picture Booth
Auditorium Ceiling 6 Circuits (White)
Auditorium Ceiling 6 Circuits (Red)
Under Balcony Ceiling 3 Circuits (White)
Under Balcony Ceiling 3 Circuits (Red)
Over Balcony Ceiling 4 Circuits White
Red

Fig. 1—Wiring diagram showing control of general illumination from stage and motion picture booth.

The general auditorium illumination can be controlled by remote control switches, as per Fig. 1, with momentary contact switches at the stage switchboard and in the motion picture booth. The exit and all stair and emergency lights are controlled from a locked panel board in the foyer. These circuits should, if possible, be supplied with two sources of current so that in case of failure of one supply they will be automatically switched to the emergency or stand-by, which can be a service from another power company if there are two companies. If the service of only one company is available, stand-by service may be secured from an isolated plant or storage battery. The latter arrangement is preferable as, by using six sets of the modern automobile battery of 6 volts each, a standard 32-volt Edison base lamp can be used. Every community has its auto electrician and it is an inexpensive job to keep the batteries in proper condition. If desired, a standard farm lighting generator could be attached to a 1-hp. a.c. motor to provide current for charging the batteries. This system of using automobile batteries is simpler as repairs or rentals are always procurable and in addition they can be placed on a shelf and do not require any sandtrays or special lead-lined and vented battery cabinets. The capacity being about 100 ampere hours they would provide current for twenty standard 20-watt lamps for eight hours which gives a large factor of safety in providing all illumination necessary to empty the building of occupants.

The only objection might be that a duplicate set of circuit conduits must be run to each outlet to provide for the two voltages. This extra cost is small when the cost of service rendered is considered in comparison with any other scheme except the stand-by service of another power company.

A scheme of automatic stand-by switch-over is shown in Fig. 2 and operates as follows:

On failure of power company No. 1 service, no-voltage coil (A) is de-energized thereby closing contact (y-y^1) which energizes release coil (D), and opens No. 1 remote control switch and thereby closes contact (I) and also closes plunger switch (H) which latter completes the circuit to coil (C) through

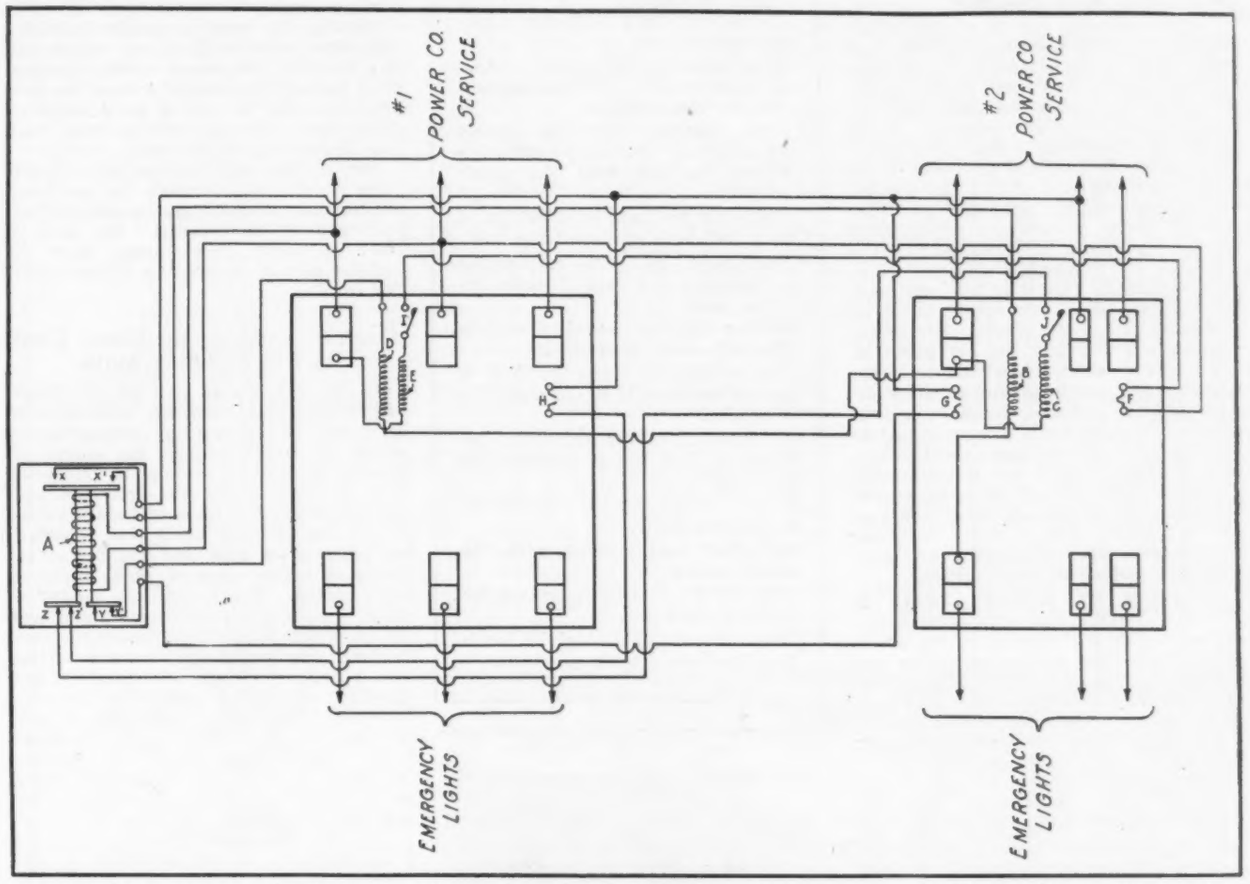


Fig. 2—Wiring diagram showing automatic throw-over con trol scheme for emergency lighting with stand-by service.

contacts (z-z^1) and contact (J), thereby closing the remote control switch on the service of power company No. 2. This opens plunger switch (G) breaking the circuit on coil (D) and opens plunger switch (F) thereby breaking the circuit to coil (E). When the service of power company No. 1 is restored magnet (A) is energized and contact is broken across (z-z^1) and made across (x-x^1) which energizes release coil (B) and thereby opens No. 2 remote control switch; this closes plunger switch (F) and completes the circuit to coil (E) thereby closing the remote control switch on No. 1 power company's service.

Telephone service between ticket office and stage and motion picture booth should be provided and with this number of phones a code ringing, common talking, system would provide the necessary service. Between stage and motion picture booth extra wires should be run to provide a return call buzzer system of signals.

Successful Association Meeting Held at Sacramento

One of the most enjoyable, and at the same time one of the most successful, meetings of the California State Association of Electrical Contractors and Dealers was held in Sacramento on Oct. 27. The Southern Pacific steamer Navajo was chartered for the trip from San Francisco and 84 members from the Bay and southern points were on board when she left at five o'clock on Oct. 26. About 50 additional members had assembled at Sacramento and the meetings were attended by approximately 130 men who were keenly interested in the subjects under discussion.

In the morning the Executive Committee held its meeting, followed, at two o'clock in the afternoon, by an open meeting which was well attended and at which were presented papers of material concern to all present. F. V. Mitchell, a certified public accountant who has devoted special attention to the electrical business and who has devised special accounting systems for that class of trade, presented a paper based on his experience in investigating the accounts of numerous electrical contractor-dealers. Mr. Mitchell paid particular attention to the consideration of overhead and to net profit. His investigation showed that the net profit of a group of electrical contractors, after allowing for overhead and other costs, was only 2¾ per cent. Considering that this is less than bank interest and less than the return from good investments, Mr. Mitchell pointed out the necessity for better accounting methods among the electrical contractors as the fact of low net profits was in every case due to lack of proper accounting and consequent insufficient cost charges.

Following Mr. Mitchell, Albert H. Elliot, a leading San Francisco attorney, spoke on the relation of the credit manager to the contractor-dealer and brought out many new thoughts. He pictured the credit manager in the light of friend and counselor rather than as an antagonist, as is frequently thought. Mr. Elliot also pointed out some of the opportunities that are open to the credit manager to do constructive work among the electrical trade by closer acquaintance and relationship.

At seven o'clock the members gathered at an unusually attractive dinner which had been arranged by the committee at the Travelers' Hotel. During the dinner entertainment was furnished by local talent which had been gathered together by "Cass" Schneider. A remarkable after-dinner address was given by Albert H. Elliot who spoke on "The Business Man and the Constitution." Mr. Elliot's remarks were inspiring and uplifting and served to create a deeper reverence for that remarkable document drawn up by our forefathers.

The San Francisco and southern members of the party left at eleven o'clock on the "Navajo" and arrived in San Francisco at a little before noon on Sunday. Those who took the steamer trip were loud in their appreciation of the splendid work of the committee of arrangements and of the efforts of the Southern Pacific Company to make the trip pleasant and enjoyable.

Side Lights on the Sacramento Trip

Nearly everyone was in high spirits.

Harry Garbutt won the name of being the leading raconteur of the electrical industry. He gave a very interesting and learned discussion of recent inventions in the saloon of the steamer and explained in detail the construction and operation of the Bonifone and the Oxometer.

Frank Woodward will now be known as "P.P."—(peach pit) Woodward.

Dent Slaughter invented an entirely new style of traveling bag just for the occasion.

B. S. Manuel drew the grand surprize of the trip although Harry Garbutt was the prize winner.

Teddy Du Pas said he didn't know they had beds on board the boat.

Stan Pierce got a lot of practice in kneeling but said it made his knees sore.

Walter Mobley voted the trip pleasant and profitable.

Harry Guilbert says he had a good time even if it did cost him his voice.

We know the river was dusty because of the heavy demand for ice water.

Five or six at a table makes such a sociable game.

Don Ray was present with his usual smile.

Ask Art Fierce why he sat on the back of the chair.

That was SOME midnight lunch the Southern Pacific provided.

Al Elkin and Cass Schneider exchange greetings in the Capitol City. Both are ardent workers for the best in the industry and are popular members of the contractor-dealers' organizations.

Electrical Dealer Holds Electric Range Cooking School

The Hudson Electric Company, Roseburg, Ore., has recently completed a one-week electric cooking demonstration. Six afternoon cooking classes were held covering the various types of cooking and baking, Grace Bogue of the Westinghouse Electric & Manufacturing Company being in charge. The purpose of the demonstration was more for the education and instruction of housewives already owning electric ranges than for selling, although some direct sales were made.

Harold B. Hudson, who is the owner and manager of the Hudson Electric Company, has been very active in pushing range sales in Roseburg, which has a population of about 5,000. During 1922 he sold 122 ranges and so far this year has sold 70. All of these installations have water heaters as well, and use double throw switches.

Mr. Hudson reports that all of these sales were made through his personal solicitation without the assistance of salesmen or advertising. He used a time payment plan spread over 12 months giving, however, a $10 discount for cash.

Electric Ironing Machines Used to Kill Coddling Moth

It has been found that electric ironing machines, electrically heated, are admirable for killing the coddling moth which conceals itself in the seams of walnut sacks. So serious is this pest that it often costs the growers and packers many hundreds of dollars annually. One grower alone has reported an expense of $250 per day for extra labor in taking care of sacks infested with moths. The ironers are equipped with a 5-kw. heating element and are 46 in. wide. It is found possible to run through two sacks at a time and during the passage of the sack through the machine all moths and eggs are destroyed. The cost of operation is very low and the protection secured is absolute. Practically all of the walnut growers of southern California have adopted this means of eliminating the danger and loss from this pest.

As a result of the activities of the Denver (Colo.) Electrical Cooperative League in bettering wiring installations, 489 outlets were added during September to jobs actually under construction or to be started soon. Through the efforts of the League, all plans for new schools in Denver are provided with at least one convenience outlet in each classroom. Ninety-eight convenience outlets were added recently to one of the larger school jobs, making a total of 226 for that particular building.

An unusual and perhaps little known use for electric washing machines is that of a leading oil company which uses them for washing oily waste. The waste comes from the washers clean and ready for use thereby effecting a very material saving in the purchase of this commodity.

Paul's Electric Store, Medford, Ore., has moved from the corner of Central and Main Streets into new and enlarged quarters in the Medford Building on north Central Street.

Making Window Displays Attract By Means of Motion

It is well known that the best window displays from the point of view of attracting attention are those which have some moving object. Hardly a person can pass unnoticed a well dressed window in which a part of the material displayed is actually in operation. Dealers have been quick to take advantage of this fact and have developed many very clever ideas which have produced sales results. One effective way of displaying electric turnover toasters is to arrange for the mechanical operation of the toaster in the window. The spectacle of the toast turning automatically without visible means of control or operation never fails to attract attention from the passers-by. The following account of such a display is described by A. J. Hensler in the September issue of "Contact," the monthly magazine of the Westinghouse Electric & Manufacturing Company.

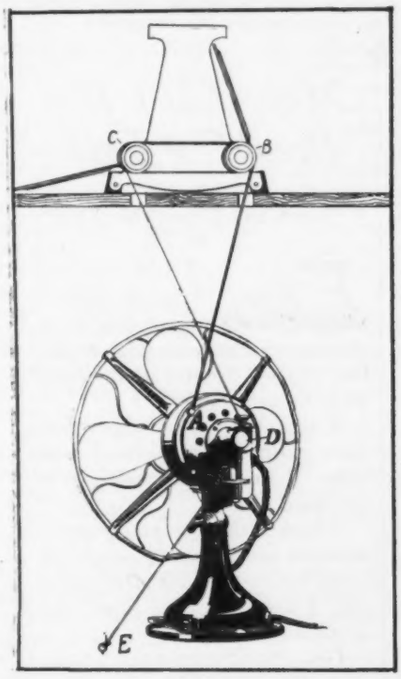


Diagram showing method of attaching fan to toaster to secure moving display for window advertising.

"There have been many ways and means of displaying the electric turnover toaster so that it will operate mechanically without any outside help, but all such displays that have been used in the past have been somewhat complicated and have required a person of mechanical ability in order to get them to work correctly.

"From the picture you can see how simple it is, as it does not require a lot of material such as washers, shafts, lugs, etc. All you require is a toaster, a 10-inch oscillating fan, which you should carry in stock, and a piece of silk cord.

"To set up the display remove the fan blades and guards, place the turnover toaster on a table or a box directly over the fan, not more than 6 or 7 inches away from the table or top of box, take a piece of silk cord and fasten one end to A, run the cord up to the toaster through a crack or a very small hole, wrap the cord around the knob of the toaster marked B, then run the cord from B to C, wrap the cord around the knob marked C three or four times and bring it down through the table top or box through a small hole or crack, run the cord, so that it will catch on the oscillating part of the fan, marked D, when the fan is in the right-hand position, bring the cord down to the floor and fasten it to a nail or screw marked E. It will require but little adjusting to get it in the right position."

Sacramento Dealers and Power Companies Joint Meeting

In an effort to arrive at a common understanding of their mutual problems the contractor-dealers of Sacramento and some of the officials of the Pacific Gas and Electric Company and the Great Western Power Company held a joint meeting on Oct. 17. The meeting was attended by H. E. Sandoval and E. W. Florence of the Pacific Gas and Electric Company and by George Sanford and J. W. Wrenn of the Great Western Power Company as well as by most of the members of the Electrical Contractors and Dealers of Sacramento. A brief discussion was held relative to merchandising and also as to installation conditions and requirements. The necessity for educational propaganda was brought out as was the advisability of the electrification of the homes of contractors and dealers. J. C. Hobrecht explained that the association stood for the best of workmanship and that in turn the power companies were asked to support the activities of the association leading to quality installations. The meeting was pronounced very successful and served to strengthen the friendly relations between the two interdependent branches of the industry.

Sacramento Contractor-Dealers Hold Interesting Meeting

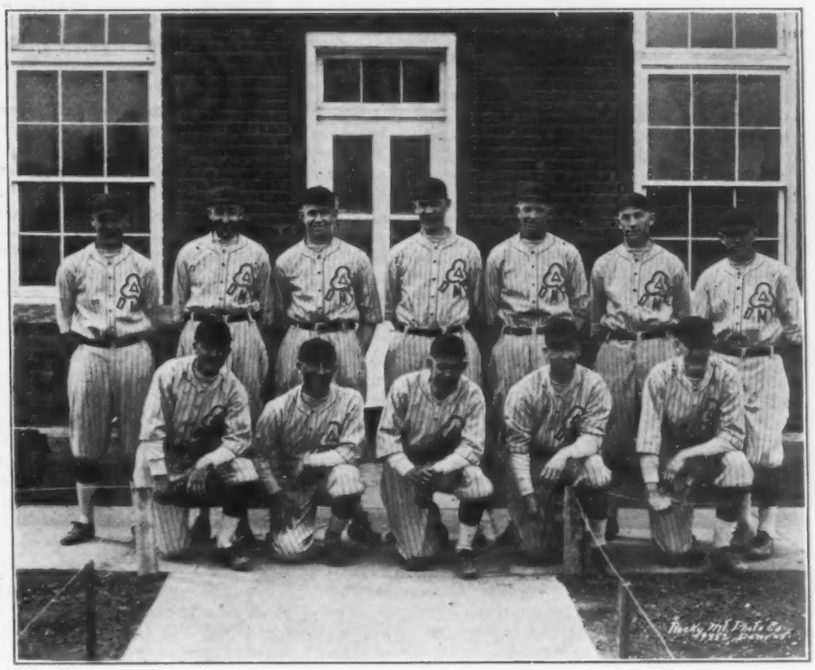
On Oct. 10, the Sacramento Valley Electrical Society held its meeting at the Pacific Gas and Electric Company steam plant on the Sacramento river near the city filtration plant. President Harold Willis presided.

Dinner was served prior to the opening of the regular meeting. Jason L. Frye, of the Great Western Power Company, and Earl M. Hart, of the Pacific Gas and Electric Company, rendered two solos—Mr. Frye at the saxophone and Mr. Hart at the piano. The Pacific Gas and Electric Company orchestra furnished other music during the evening.

Eugene McCann, manager of personnel, Pacific Gas and Electric Company, San Francisco, gave a very interesting address to the society on the subject of personnel work, with particular reference to its application in that company. This was followed by the exhibition of a three-reel motion picture which was not only very good but entirely different from pictures shown heretofore and one such as is seen in motion picture shows. Following the meeting a general inspection of the steam plant was held, during which time the turbines were started up in the presence of the society.

The Bullock Electric Company, Kelso, Wash., headed by **P. J. Bullock,** announces that a new electric shop will be opened on Second Street, in the former quarters of the Snyder Electric Company. Mr. Bullock was formerly engaged in business in Weiser, Idaho.

The Electric Corporation has incorporated in Portland, Ore., with a capital of $25,000 and will conduct a general electric contracting business.



Activities of the electrical industry are not all confined to generating and distributing electrical energy. Some of the energy is spent in healthful sports and the above photograph shows the devotees of the great American game as found in Denver. This is the champion base ball team of the Denver City League and its members are from the ranks of the Pubiic Service Company of Colorado.

JOBBER, DEALER AND SALES AGENT

Get the Baker to Help You Sell Electric Toasters

Eat More Toast Campaigns Prove to Be Successful in Selling of Electric Toasters and Bread at the Same Time

When the preliminary negotiations have been completed and the final settlement is at hand, you will usually find that the man in the other industry is really ready and anxious to cooperate with you, with the intention of increasing business in both fields. At times it may seem necessary to spend considerable effort in the preparation of cooperative movements, but the results will usually justify the time spent in this way.

One of the campaigns which have been presented to the public is the one which advises "Eat More Toast." Through the cooperation of bakers and men of the electrical industry, a considerable amount of publicity has been secured in the communities where the campaign has been conducted. The bakers have been supporting the idea that toast is one of the best forms in which bread can be eaten, and the electrical men, who have been pushing electric toasters, have in turn produced the slogan "Make Toast Your Breakfast Food." By working together in this way, the cost of the advertising has been divided over a larger number of merchants and results have been highly satisfactory wherever the cooperative move has been made.

When bakers, and dealers in bakers' supplies to the number of nearly 1,000 people met in French Lick Springs, Ind., in September, their convention looked almost to be a convention of electrical men instead of bread men. The biggest topic the bakers discussed was that concerning the placing of electric toasters in every wired American home, as the preface to getting toast into the same homes as the principal breakfast food.

In the hotel lobby the biggest display was that of toasting devices. One whole day on the program was given over to the discussion of a "Toast for Breakfast Campaign" and of ways and means by which bakers could secure the cooperation of electrical dealers and jobbers in the bakers' plan for a general toaster-selling campaign.

At the convention a considerable amount of discussion revealed that by cooperating with electrical jobbers and dealers as well as central station executives, the bakers could increase their sales of bread by a large amount. As a result of this many of the bakers returned to their homes to promote extensive toaster campaigns. One of the methods that has been used by the bakers was that of giving coupons good for $1 or $2 on the price of some standard toaster. The coupons were made redeemable at any store dealing in electrical appliances and also at the central station company's retail store. The means of paying the electrical men for these coupons have varied according to the agreements made in the separate cities.

To further increase the use of toasted bread as a breakfast food, a wholesale baker in Houston, Tex., had banners painted which read, "Make Toast Your Breakfast Food—Use Merit Bread." These banners were hung on the sides of all of the delivery cars used by the company. This advertising stunt was used throughout the time that local electrical dealers engaged in a toaster selling campaign.

The American Bakers' Association has been urging the adoption of a sales campaign which would bring about the more extensive use of toast as a breakfast food with the purpose of increasing the consumption of bread. The organization has also pointed out to its members that the electric toaster is the most efficient device for this work. The policy of cooperating with electrical dealers to place more electric toasters in the homes has been urged by the Association and in many cases the local bakers have followed the suggestion.

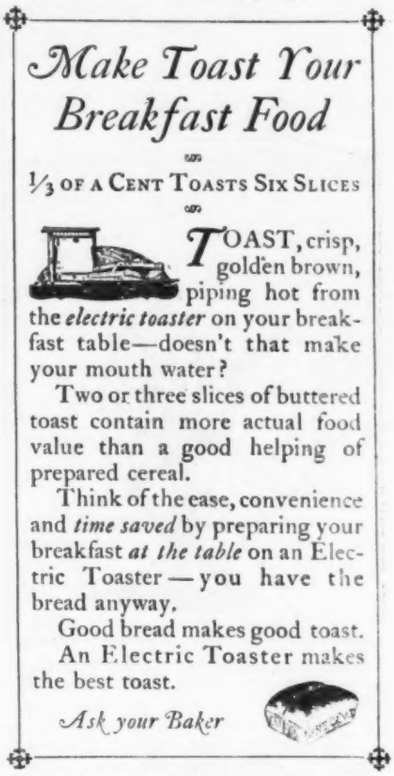
Starting with the intention to put a toaster in every home, Shelly Brothers, a Vancouver, B. C., baking firm, in cooperation with the Electrical Service League of British Columbia and other electrical interests in the city, conducted an "Eat More Toast" campaign in that city early this summer. Despite the fact that the goal was not reached, the sale of electric toasters was increased considerably as a result of the cooperative effort. The sales campaign lasted for two weeks and during that time approximately four hundred toasters were sold.

Through the bakery wagon drivers an attractive circular was distributed with every loaf of bread sold, just prior to the opening of the campaign. This circular stressed the food value of toast as a breakfast food and the convenience of making toast electrically.

During the two weeks, every driver was given standard toasters to place on free trial along his route. These toasters were furnished the bakery firm by the local jobbers and were sold at list price. The driver was allowed seventy-five cents commission on each sale and the difference between the list price less commission to the driver and wholesale price was turned over to the local Association of Electragists, International, for distribution to dealers.

Every dealer featured toasters in his window displays. Display cards and window streamers were furnished dealers by the League and the Sun Maid Raisin Company also furnished attractive display cards to the dealers.

The publicity campaign starting with the circulars distributed to the consumers, included daily advertisements in the newspapers. Street car cards were also used to advertise the campaign.


Make Toast Your Breakfast Food
1/3 OF A CENT TOASTS SIX SLICES
TOAST, crisp, golden brown, piping hot from the electric toaster on your breakfast table—doesn't that make your mouth water?
Two or three slices of buttered toast contain more actual food value than a good helping of prepared cereal.
Think of the ease, convenience and time saved by preparing your breakfast at the table on an Electric Toaster—you have the bread anyway.
Good bread makes good toast.
An Electric Toaster makes the best toast.
Ask your Baker

The circular, reproduced above, was presented to purchasers of bread, in the Vancouver campaign.

Manufacturers and the central station featured toasters in their street car and newspaper advertising.

The campaign attracted not only the attention of other bakeries but also of hardware and department stores so that the slogan "Make Toast Your Breakfast Food" was brought to the attention of the public from many sources. What is most important to the electrical industry, is the fact that toaster sales were very greatly increased. The housewives who tried out the electric toasters and did not buy during the campaign are certainly good prospects for toasters and other appliances in the future.

Develop a Classified Mailing List of Prospects

Colorado Springs Company Employs Practical Means to Get Best Results from Direct-by-Mail Literature

Each year many millions of dollars are spent in circularizing prospective purchasers of electrical equipment. This expense is of course one which is separate and distinct from the sums that are spent in advertising magazines, newspapers and in other less direct means. The value of all of these forms of advertising is freely admitted and the progressive business manager will be anxious to state that he considers the money well spent.

The direct-by-mail appeal or presentation of a product which the prospect is supposed to be interested in, is perhaps one of the most powerful forms of advertising that can be employed by any merchandising firm. The personal appeal which it is possible to make in material of this character is extremely productive of sales and consequently is much favored by firms that are desirous of securing more business from a certain list of customers. Direct-by-mail advertising lends itself to the circularizing of local communities particularly well and the central station or contractor-dealer can do well to expend moderate sums on this form of advertising.

One of the principal difficulties to be met in the preparing for a direct-by-mail campaign, is that of securing a mailing list which will be suitable for the greatest number of uses. A keyed list which will show the person addressing the literature, just which persons should receive the particular piece of sales literature, is undoubtedly the most perfect that can be employed. In this way lost motion is avoided and a considerable amount of money is saved which would be spent if the literature were sent to the entire list.

Central station companies can secure excellent mailing lists by using their consumer list. In this way all of the homes that are served by the central station can be reached by the literature that the company wishes to send out at any particular time, but this brings up the point that a certain percentage of this number already has the appliances that the company wishes to advertise. It can readily be seen that a considerable amount of money will thus be spent which will probably bring no return. The housewife who already has an electric washing machine is not a suitable prospect for another machine. She may be induced to talk electric washing machines to her friends, but the advertising manager does not want to burden her with literature in which she is not interested, for if she once gets the idea that a certain concern is sending her material in which she is not interested, she will be loath to pay any attention to any literature that may be sent to her in the future.

The ideal solution is to make each recipient of the literature feel that personal attention has been paid to his or her case. Over a large number of persons this is of course difficult, but a system of grouping, whereby the names of persons interested in the same appliances are gathered into a separate list will permit the advertising manager to pay particular attention to this class of prospects. The electrical contractor-dealer can also follow this same path for he, too, can group his prospective customers in classes and can direct his sales talks to classes of individuals instead of to all of his prospects regardless of their needs.

The preparation of these classes of prospects involves considerable thought on the part of the person in charge of the lists. Extensive research is often necessary to secure the information which will bring about the classification of prospects into groups such as are desired. It is neither practical nor economical to make a detailed survey of the homes in any one city at regular intervals in order to determine what appliances are in use there and yet this method furnishes one of the most accurate methods of securing the information desired.

The Colorado Springs Light, Heat & Power Company has evolved a plan which could be followed by the larger electrical contractor-dealers and central station companies. This company believed that it could well afford to stand the cost of one survey of its residential customers in order to determine what appliances were being operated by the customers on its lines. This would give the preliminary information to start with and then a system of checking was installed to endeavor to keep the files up to date. The electrical contractor-dealer could do this same thing on a scale proportionate to his business, making a survey of his customers and of the homes of any other prospects that he wished to secure as customers.

The Colorado Springs Light, Heat & Power Company made the survey in 1922 and on a specially prepared form entered all of the information that was secured. While making the survey, the men detailed to do the work investigated the condition of the appliances that were used in each home and noted the condition of each appliance on the card which carried the name and address of the customer. Thus according to the condition of the electric dishwasher a check mark was placed in either the "Good" or "Bad" condition column. In addition to this the inspector by a series of questions determined whether the electric service was satisfactory to the housewife. Space was provided to indicate whether the person living in the house was an owner or a tenant and the card was dated and signed by the inspector. As this company supplies gas service to the city a survey of the gas appliances was also conducted at the same time.

After the preliminary check had been made it was necessary to use some other means to keep the information up to date. Consequently a record of all appliances that the central station company sold to its customers was kept and the proper notations were made on the service record cards each month. No attempt was made to keep track of the appliances sold by the electrical contractor-dealers of Colorado Springs, except that whenever a man from the central station entered a home he endeavored to secure a correct list of the appliances that were in use there. By a little questioning this information was secured and the man reported to the person in charge of the service record cards.

A key system can be attached to these record cards and in this way the list of names of persons who, for instance, have no vacuum cleaner, may be immediately picked from the entire file and the sales literature sent to this class of prospects only. By noting on the cards when appliances are sold to customers and by checking up on the appliances in use whenever company men visit the homes the Colorado Springs Light, Heat & Power Company has been able to group its customers fairly accurately. The electrical contractor-dealer would probably use a smaller list but he could profitably follow the plan employed by the central station company.

Service Record

THE COLORADO SPRINGS LIGHT, HEAT & POWER CO.

233
J. H. VAN HORNE
LONE PINE COTTAGE

OWNER

TENANT

ELECTRIC APPLIANCES	Condition Good	Bad
Curling Iron		
Dishwasher		
Fan		
Grill		
Heating Pad		
Iron		
Ironing Machine		
Percolator		
Sewing Machine		
Space Heater		
Toaster		
Vacuum Cleaner		
Waffle Iron		
Washing Machine		
Range		

GAS APPLIANCES	Condition Good	Bad
House Piped		
Space Heater		
Hot Plate		
Range		
Water Heater		
Laundry Stove		
Is Coke Used		

Gas Service Satisfactory?

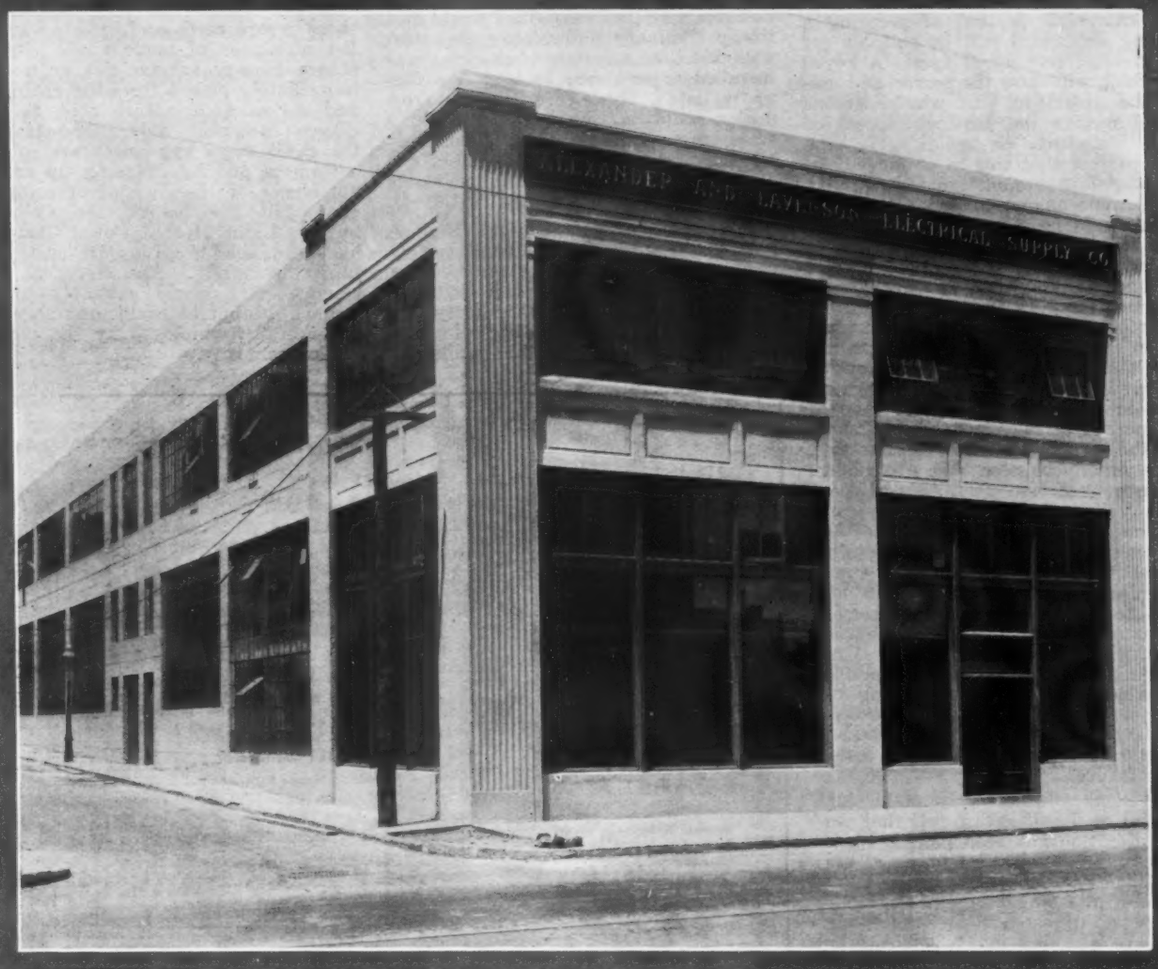
Electric Service Satisfactory

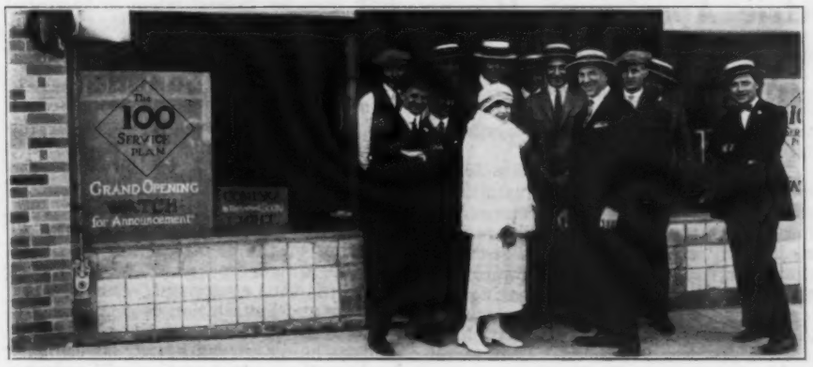
Date ..... 192..

Representative.

Results of the original survey conducted in 1922 were entered on service record cards, one of which is reproduced above. Additional information was added as it was secured from sales records.

TO enable it to better serve its customers the Panama Lamp Company recently moved to new quarters at 1066 Mission Street, San Francisco. The new store is shown at the left. In the new building erected for the Alexander & Lavenson Electrical Supply Company, in San Francisco, electric air heaters have been used and special attention has been paid to the lighting of the interior.





John W. Hamilton, president of the new firm, standing in the foreground, A. S. Butterworth, Jr., in the left rear under the street number, and a group of members of the 100 Service Plan organization, at the entrance to the store prior to its opening. Miss Helen Ferguson is the young lady.

Ex-Service Men Cooperate in Electrical Business

One Hundred War Veterans Establish New Firm that Will Engage in Electrical Retailing and Construction Work

By W. A. KNOST

Something new has appeared on the horizon of the electrical retail business, and that newness is incorporated in the cooperation of 100 men all of whom saw service in the World War. "The Hundred Service Plan," a corporation composed of 100 veterans of the World War, 90 per cent of whom were wounded or otherwise disabled in the service, has opened an electrical retail store at 5177 Hollywood Boulevard, Los Angeles, Calif. This is believed to be the first store of its kind in the United States to be operated exclusively by veterans of the World War. The corporation, capitalized at $50,000, is conducting an electrical retail and contracting business, selling electrical household articles, and doing such contracting as they are able to handle at the present time.

They have started this business with that spirit of cooperation, loyalty and determination which they learned on the battlefield, and in time they hope to follow this venture with a chain of similar establishments. By doing this they feel that they are not only advancing themselves but are setting an example to other disabled service men. The old story of strength in unity has been put to work, and by scraping together their individual cash and credit and utilizing their standing in the community these 100 service men have converted their handicap into a $50,000 pyramid of power.

The members of the corporation have not attempted to build their business upon their war records, but have asserted their determination to build their success upon best values and courteous and efficient service.

Their motto of service which is printed on their cards is as follows:

SERVICE

—is the rock on which THE 100 SERVICE PLAN is founded—service rendered in a new spirit by men

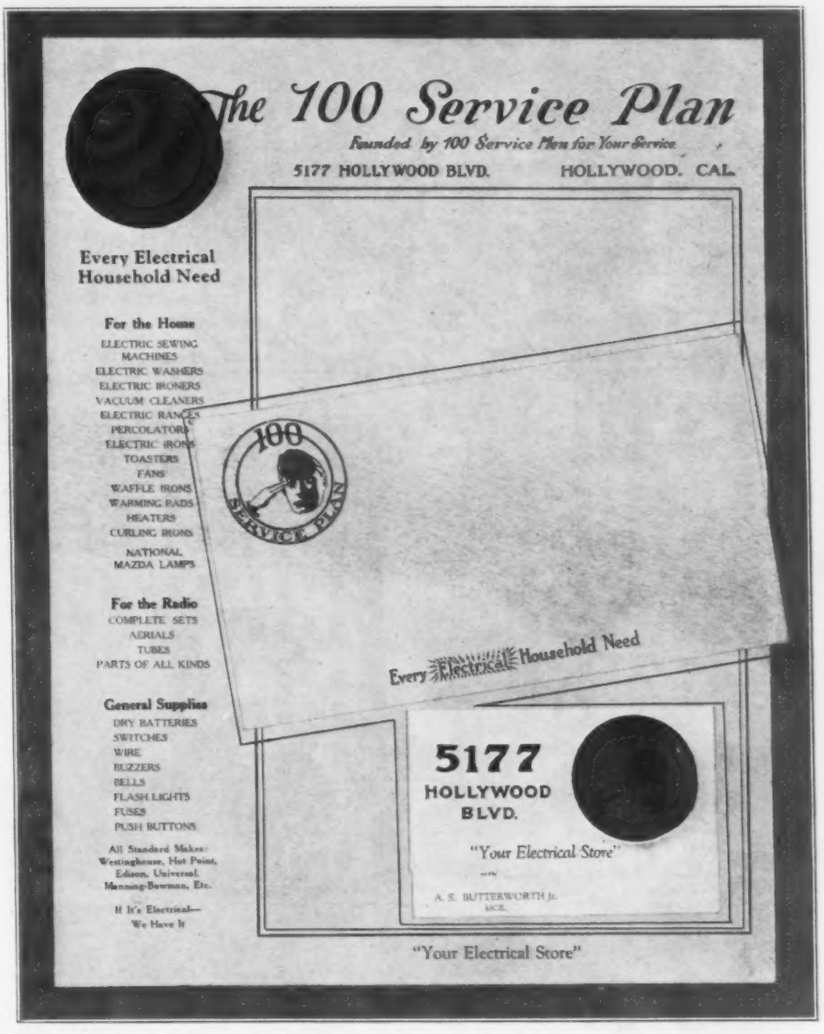
WHO KNOW WHAT THE FULLEST MEASURE OF SERVICE MEANS.

The store is equipped with the latest designs and fixtures for display and storage of goods, there being attractive cases for the display of appliances, booths for the larger appliances and well arranged racks and shelves for the display of lamps and supplies. The radio department is arranged in a separate room.

Lighting of the store is done with the use of X-Ray and Brascolite units, the former being equipped with various colored shades so that the store and windows may be lighted in any color desired; this has attracted unusual attention from the throngs who pass there nightly.

The opening of the store was preceded by a parade through Hollywood streets and the keeping of "open-house" throughout the day. Miss Helen Ferguson, assisted by Pat O'Malley, featured in Reginald Barker's "The Virginian"; Phillipe de Lacy, the French war orphan, a protege of Mary Pickford; Coy Watson, the ten-year-old film favorite and other prominent members of the film company were on hand.

Officers of the corporation are: John W. Hamilton, president and chairman of the board; De Vier Ely and A. S. Butterworth, Jr., vice-presidents; Olive Doerr, secretary and treasurer; Paul Schwartz, James Lewis and S. A. Capodice, directors. A. S. Butterworth, Jr., is the manager of the store, while the contracting department is looked after by J. E. Glenn, who has been in the electrical contracting business in Los Angeles for a number of years and who is a member of the Electrical Contractors and Dealers' Association of Los Angeles.



The two-color letterhead and envelope used by the organization are reproduced above as is also one of the cards used by the members to introduce themselves to their customers.

At Last! The All-Electric Apartment House

Builder to Install over Two Hundred and Twenty-eight Thousand Dollars' Worth of Electrical Devices in New Structure

In making the apartment a more desirable dwelling place the builder has been quick to recognize the possibilities of the labor-saving electric household devices which have been perfected by the electrical industry during the past decade. Electric ranges have been installed in modern apartments for a number of years, with water and air heaters a more recent, but nevertheless, highly successful innovation. So complete has this success been and so satisfactory have been the results that the electrical industry today is on the threshold of a period of application of electricity to apartment houses which promises a new era for the central station, the manufacturer, the jobber and the contractor.

There are contemplated for immediate erection, in Los Angeles, a number of apartment houses comprising more than a thousand individual apartments all of which will be completely electrified. Contracts have already been signed for the Security Apartments, Hollywood, Calif., involving all of the electric labor-saving household devices which have been perfected, including ranges, water heaters, air heaters, refrigerators and dish-washers.

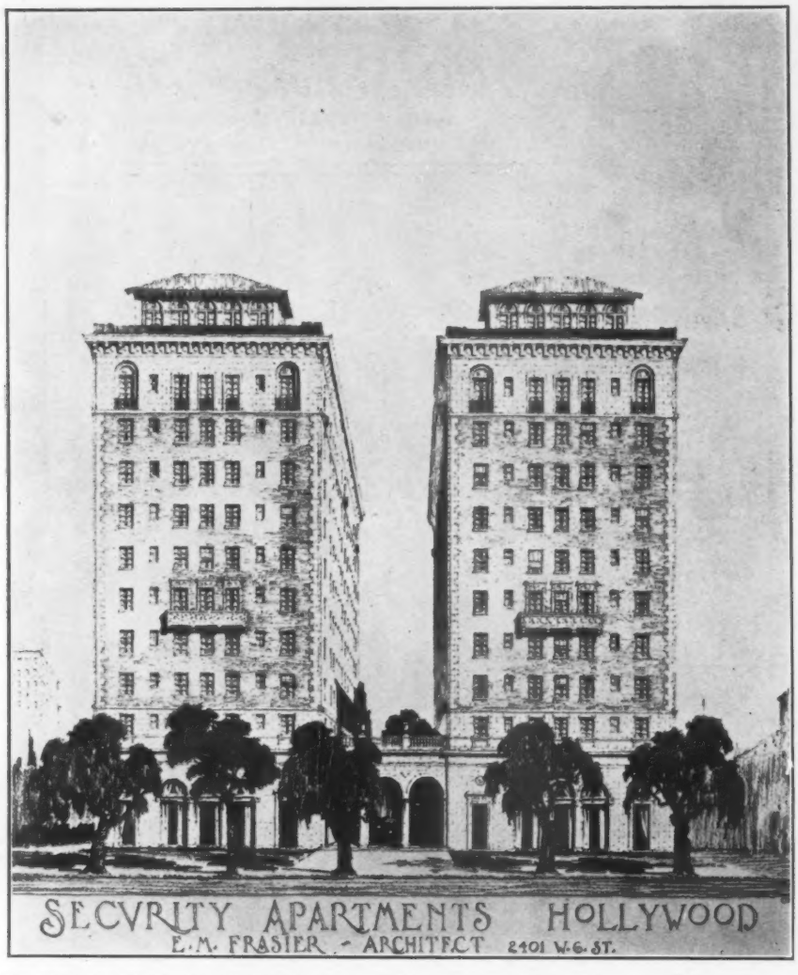
E. C. Ebert of Los Angeles is the one to whom credit for the installation should be given. Through demonstrating to the architect and builders that electrically cooked meals are superior, that electric refrigeration is practical and electric water and air heating are highly desirable, Mr. Ebert has paved the way for a number of future all-electric apartment houses. As a result of his arguments, E. M. Frasier, Los Angeles architect, has incorporated in the Security Apartments every convenience which electricity can offer to the housewife.

The net result is that the new building will have the latest and most up-to-date electrical equipment that the market affords. This will include a Frigidaire electric refrigerator, a Hotpoint-Hughes electric range, a Sani-Sink combination sink and electric dish washer and an Electrode electric water heater for each of the 170 apartments and, in addition, the entire building will be heated electrically with Wesix flush type heaters. The size of the building may best be judged when it is stated that there will be required 533 electric heaters. The class of building and tenant may be determined from the fact that the individual apartments are said to sell for from $6,000 to $34,000 each and it is further stated that by far the major portion of the apartments are already sold, despite the fact that the building will not be ready for occupancy until about May 1, 1924.

The value of such equipment to all branches of the electrical business cannot be overestimated. The total list price of the equipment, exclusive of fixtures and installation cost and including only those items mentioned above is said to be in excess of $228,000. The load for the central station will approximate 2,500 kw., excluding lights, elevators, etc., and the wiring job will undoubtedly be the largest ever let for a building of this type. The sales possibilities, therefore, to all branches of the industry in connection with this type of equipment can readily be seen.

A significant fact in connection with this building is that there will be no chimney required other than that for the incinerator. A glance at the picture herewith shows the symmetrical effect resulting from the absence of unsightly stacks and chimneys and the saving in space is measured in dollars and cents. There is, too, saved the enormous cost of constructing these flues and the cost of keeping them cleaned out.

E. C. Ebert, to whom is due credit for the complete electrification of the Security Apartments.



The Security Apartments—the ten-story community apartment house being erected in Hollywood. This building will be completely equipped with electric ranges, water heaters, refrigerators and combination dish washers and sinks and will be electrically heated throughout.

The Electric Development Company of California, with head offices in the Underwood Building, San Francisco, has recently opened a branch office at Healdsburg. This branch office is in charge of S. Hilgerloh who has been engaged in business in that territory for over thirty years. The company is also considering the opening of branches at San Rafael and Sacramento. The Santa Rosa branch of the concern is now in charge of Ralph W. Hickey. The Electric Development Company of California engages in heating and power engineering work.

The Pacific States Electric Company has recently announced the opening of new offices and a warehouse at South 122 Lincoln Street, Spokane, Wash.

Giant Electric Heater Attracts Crowds' Attention

Manufacturer in Cooperation with Local Electrical Dealers Displays Ten Kilowatt Heater which Advertises Product

An example of how considerable attention was recently secured for an electric heater is presented by the Simplex Electric Heating Company. This concern, which is the manufacturer of the Sunbowl electric heater, developed a greatly enlarged reproduction of the standard heater that was designed to be used as a means of securing attention. The heater, known as the "Giant Sunbowl," is 6 ft. in diameter, weighs 150 lb., is of 10-kw. capacity and operates at 220 volts. The heat that is given off is so intense that it can be felt at a distance of 100 ft. and at 50 ft. the heat is so extreme that it occasions pointed remarks. The heater is swiveled so that the attendant operating it may direct it in any desired direction that the greatest attention may be attracted.

This giant heater formed the center of the Simplex Electric Heating Company display at several fairs held in southern California during the last month.

During the past month, R. C. W. Libbey, Pacific Coast representative of the manufacturer, has been displaying one of these enormous heaters at a number of the leading fairs in southern California. The "Giant Sunbowl" is placed in the center of the company's display booth and the regular type heaters are grouped around the main attraction. In this way attention is attracted by the large heater and is held by the smaller devices which the company has for sale.

In several instances the large heater has proved so interesting to visitors that they have requested information concerning the use of it. An orchardist, on seeing the 10-kw. heater, questioned Mr. Libbey concerning the use of the heater as a protection to his orange grove during frost periods. A doctor in Los Angeles considered using the powerful heater as a means of giving electric baths to his patients.

The idea of using the large heater for publicity purposes was started last year when the Simplex Electric Heating Company placed the first one of the "Giant Sunbowls" on a truck which was supplied with a storage battery. This truck was driven through the streets of several eastern cities and attracted so much attention that the company manufactured several more of the large heaters and this September started the trucks on a comprehensive tour of the eastern section of the United States. Plans are also under way to carry the publicity work on in several western cities.

This year the large heater is mounted on a 3½-ton gasoline truck equipped with a Buda gasoline engine driving a 20-kw., 220-volt generator. Energy for operating the "Giant Sunbowl" and four smaller units is secured from this generating equipment. Three of these trucks have been put on the road, spending several days in the larger cities and stopping in the intermediate communities to permit the public to view the unusual sized heater. In addition to the five heaters that are mounted on the truck, there is a super-carton, which is a large sized reproduction of the carton used in delivering the regulation heater. This carton carries effective advertising on its faces and at night is illuminated by shielded lamps. The tailboard of the truck is also used to carry the message to interested spectators. The truck is operated by a uniformed chauffeur who is accompanied by a demonstrator. In each territory the truck is in charge of the company's representative, who arranges for its local use and looks after the cooperative publicity and display activities of the local dealers. It is the company's intention to have thirteen such trucks engaged in the campaign.

Wherever the truck has gone the giant heater has attracted considerable attention and sales of heaters have been stimulated to a marked extent. The displaying of the heaters at the southern California fairs has also caused considerable comment.

THANKSGIVING THOUGHTS

By JOE OSIER

"Thpeak for yourthelf, John," coyly lisped Priscilla as she basted a turkey with one hand—

And a little Pilgrim with the other—

While listening to John Alden (a proxy for Miles Standish) blow his chesty chieftain up to 180 pounds, in an effort to make him look like a comer to the lady of his heart who—by the way, was—

The fair Priscilla.

"Thpeak for yourthelf," she repeated and John, in spite of the fact that he was double-crossing his Captain and giving the sturdy Standish a—

Dirty deal from the bottom of the deck—

Spoke for himself and won, placed and showed in the Thanksgiving handicap run in Plymouth that day.

But to come to the point: On this Thanksgiving Day, putting aside all thoughts of back-biting, hammer wielding competitors and—

Overhead which has knocked more than one firm for seven short circuits—

Men of the Electrical Industry in Plymouth, Podunk, Pumkin Center, Pittsburg and other—

GADSOOKS! I MUST AWAY. THE UP TO DATE TRIBE ARE GETTING ALL US ANTIQUES! I'M IN LUCK IF PRISCILLA HASN'T BEEN CARRIED OFF BY THEM
METHODIST
GANGWAY

"Let's all give thanks that we haven't run from Progress."

Sites and cities in these United States should—

Arise from the festal board, before the operation on the National bird is performed, and—

Return thanks for the blessings which have showered down during the past twelvemonth.

They should return thanks for the volume of business cared for; for the prices which have obtained and for the profits in the pouch—(if any).

And the loyal employees, who have fronted the fray and fought the battles, shift in and shift out, should not be forgotten.

They should be thanked by word of mouth and otherwise.

Further, the electrical manufacturing companies—their representatives—their National advertising campaigns, should not be overlooked. In fact, an extra portion of blessing should be extended to these sources for the advice, guidance and cooperation so generously tendered.

And, before "Amen" is said, say a few words for the National as well as the State and Local Associations. The executive officers and the willing workers in these organizations have done much to elevate the industry—

To the peak where it now pants.

All the above being done to a turn, thanks should be returned to the household Cinderellas who—

Are becoming too proud and smart to sacrifice their girlish figures in order that a—

Few cents be saved.

Return thanks that the lamps of the ladies have been lighted and that the squawk, resounding from end to end of this broad land, will not be silenced until every home is electrically equipped and accoutered.

Then, after everything has been said and everyone helped—

Adjust the napkin and the anatomy, slip your clutch and—

Lay to't.

INDUSTRIAL NEWS

Permits and Licenses Issued by Federal Commission

The issuance of a license and a preliminary permit for two projects in the West has been authorized by the Federal Power Commission. Franklyn L. Hutton, Fred W. McNear and Frank C. Dougherty of San Francisco have been given a license for 50 years for a power project within the Tongass National Forest on Thomas Bay, about 22 miles north of Petersburg, Alaska. The project will consist of a reservoir, a conduit approximately 14,259 ft. long, a power house and a pulp mill. The proposed ultimate installed capacity will be approximately 30,000 hp.

A preliminary permit for a period of 15 months has been issued to Mary I. Crocker and J. W. Preston, Jr., of San Francisco, for a power project on the Mokelumne River and Sutter Creek within the Stanislaus National Forest in California. The project consists of three reservoirs and three conduits leading to three power houses. The first conduit is approximately 22 miles in length with a capacity of 400 sec.-ft., the second approximately 7 miles long with a capacity of 750 sec.-ft. and the third approximately 9 miles in length with a capacity of 350 sec.-ft. The first power house is to use a head of 1,175 ft., the second a head of 632 ft. and the third will operate with a head of 565 ft. It is estimated that the total ultimate installation will be approximately 48,000 hp.

The commission has also issued a number of licenses for high tension transmission lines and for several smaller hydroelectric projects. The smaller projects plan the development of power for local uses only.

Discuss State Power Ownership at Seattle Meeting

Whether it is better to extend the public ownership of utilities throughout the state of Washington, or to encourage private capital to invest money in the state was the issue involved in a recent public discussion of the hydroelectric power question at a meeting of the Seattle Municipal League in Seattle, Wash. This was one of several meetings at which the power question has been discussed.

A. S. Goss, master of the Washington State Grange, was one of the speakers, and he stated that organized farmers of the state favored the public development and ownership of the hydroelectric resources in the state. They are opposed to the Reed bill, which is a state power bill, he said, because they believe it will retard development, but they are not ready to endorse the bill, prepared by the Public Ownership League, or any other plan now under discussion, because of the diversity of interests and opinions.

Oliver T. Erickson, representing the Public Ownership League, which is backing a state power initiative bill, discussed this bill, by which it is proposed to authorize public development and ownership of power plants all over the state, each plant to become a part of a "super-power system." Mr. Erickson said the plan is similar to that under which the hydroelectric power commission in Ontario is developing the resources of the province on a large scale.

Norwood W. Brockett, representing the Puget Sound Power & Light Company, presented the side of the private power companies, and declared that the people of the state should make a very careful investigation of the Ontario system before adopting it.

Disclussing the Ontario system, Mr. Brockett said: "In Quebec, adjoining the province of Ontario, and about the same size, they are getting better results through private ownership and operation. The premier of Quebec, discussing the Ontario plan, says he prefers to permit private capital to develop the hydroelectric resources of his province to encouraging the investment of foreign capital. In this statement, the premier says electric power rates in Ontario are 30 per cent higher than in Quebec, and that in the Niagara district, the rate charged by the publicly owned Ontario plants is 40 per cent higher in some cases than the rate charged by private companies."

Mr. Brockett said that interests he represented, if let alone, would invest more than $125,000,000 of new money in the state in the next ten years, and put new property on the tax rolls instead of taking other property off. He said that honest investigation will show that the advantage is on the side of private development.

Commercial Section Meeting Is Held at Fresno, Calif.

On Oct. 19 the Commercial Section of the Pacific Coast Electrical Association held its first meeting of the year at the Hotel Fresno, Fresno, Calif. Meetings of the various sub-committees were held and topics of interest to the entire industry were discussed in detail.

Many papers were assigned for preparation and presentation at the next meeting. A. E. Holloway, general chairman, presided and in his address to the sub-chairmen asked for united support and effort for the upbuilding of the industry. Appointments and subjects to be considered by the sub-committees during the ensuing year will be given in an early issue of the Journal of Electricity.

Reorganization Made in Denver Commercial Department

Close on the heels of the recent merger of the Denver Gas & Electric Light Company at Denver, and the Western Light & Power Company, at Boulder, Colo., to form the Public Service Company of Colorado, comes the announcement of a definite departmental organization of the new company's commercial department at the Denver station.

Widespread interest has been developed as a result of the new plan because it is felt that the different branches of the electrical industry at Denver and the activities of the Electrical Cooperative League of that city are more definitely correlated than ever.

The commercial department is in charge of R. G. Gentry. The new arrangement creates two distinct departments in the commercial department, in addition to the already existing power and production departments in charge of F. F. McCammon and Clarence Keeler respectively. The newly created departments are the domestic appliance department in charge of J. A. Miller, and the commercial lighting department in charge of C. E. Addie.

Heads of all the electrical departments, as well as the four distinct departments specializing in gas, have separate corps of salesmen, who are employed to push their particular line.

All department managers, as heretofore, are held directly responsible to the commercial manager. The same is true of the floor sales department, handling both electric and gas appliances, which is managed by Jack West. A. B. Spencer has been placed in charge of all window trims in the Denver station.

Salt Lake City to Have Third Electric Home Exhibit

The electric home committee of the Rocky Mountain Electrical Cooperative League, after investigating the possibilities and the advisability of another electrical home exhibit in Salt Lake City, Utah, has submitted a favorable report. The electrical home will be built by D. A. Jenkins, and will be the third one to be exhibited. It will be opened about May 1, 1924.

The League's electric home committee consists of E. H. Eardley, manager of Eardley Electric Company, chairman; L. B. Johnson, of the Salt Lake City branch of the General Electric Company; E. A. Evans, of the Salt Lake City branch of the Westinghouse Lamp Company, and G. R. Randall, manager of the Salt Lake Electric Supply Company.

Public Utility Presents Feature Display at State Fair

The Utah Power & Light Company's annual exhibit in the Manufacturers' Building at the Utah State Fair, held at Salt Lake City during the week beginning Oct. 1, was the subject of a great amount of interest and favorable comment. A space 16 x 20 ft. was enclosed in lattice work, with a pergola effect over the centers on all four sides. Tables were built in the corners, and one on each side, making a total of six display tables.

Booth of the Utah Power & Light Company at the Utah State Fair held in Salt Lake City recently.

One of the tables was used for the purpose of telling the public about the company's preferred stock, displaying a miniature power house to which was linked a preferred stock certificate. In another part of the booth the Westinghouse Cozy-Glow Kid, in papier-mache, was placed in a standing position before an electric heater. This chubby youngster revolved on a small turn-table, attracting considerable attention.

One of the six tables was set to represent a breakfast table, featuring a toaster, percolator and waffle iron. Each of the tables carried an individual display.

A spider web was built as a ceiling over the entire booth. In the center of the web was placed a Eureka vacuum cleaner, representing the spider, and a number of large artificial bugs were fastened in the web. These bugs were labeled "Filth," "Dirt," "Disease," etc.

To secure registration at the booth a Eureka vacuum cleaner was given away to the person guessing the correct amount of dirt that would be taken from a rug placed in the public aisle-way along one side of the booth. Guesses were turned in on cards, and about 3,000 contestants participated. The winner was Miss Lucille Kunz of Magna, Utah, whose guess of 7 lb. 3 oz. was the correct figure.

Christmas Advertising Material Prepared for Industry

The Society for Electrical Development, Inc., has produced special advertising material for the Christmas season which should serve to increase the sales of electrical appliances at that time. All printed matter is in the usual Christmas colors of red, white and green and embodies the holly and Santa Claus designs. Lantern slides similarly colored have also been prepared and carry a message of the utility and desirability of appliances for gifts. The phrase "Give Something Electrical" is carried on all printed matter and on many of the slides. Other slides carry the slogan "Make this an all-electrical Christmas."

In addition to the above there has been prepared an attractive booklet containing eight pages of selling text and many clever illustrations showing appliance grouped and carrying the story of application by picture. Poster stamps, gummed and perforated, for attaching to letters and packages, will also be supplied. The billboards will also be utilized and 24 sheet posters have been printed carrying a picture of Santa Claus in a holly wreath, bearing the slogan "Give Something Electrical" and having a space for the exhibitor's name. This material is furnished at reasonable cost by the Society for Electrical Development, Inc., 522 Fifth Avenue, New York City.

A forest fire on the afternoon of Oct. 29, threatened to destroy the City of Seattle's hydroelectric plant on the Cedar River. Firemen and municipal employees fought the blaze for a number of hours and succeeded in saving Camp No. 2, near the power house, and a shift of the wind was reported to be responsible for the saving of the power house itself.

Uniform Utilities Laws Favored by Bankers' Committee

The uniformity of state laws regulating public utilities is advocated in a report submitted to the Investment Bankers' Association of America by the Association's committee on public utility securities. The committee also urged that all state commissions be given authority over the valuation, rates, service, and capitalization of the privately owned public utility plants and that these plants be required to publish full financial reports of their operations.

The report states in part that, "when administered with the broadest powers and in a judicial manner, state-wide regulation of public utilities has been conclusively proved, in the opinion of the committee, to afford the best guarantee which investors have in this country for a maintenance of that integrity of invsetment necessary for a ready flow of money into the business."

The committee recommends the sale of stocks to local investors and particularly consumers, stating that this action will be helpful in reducing political attacks on the utilities. The report states that the raising of funds for public utilities has been made difficult because of the general systems of taxation throughout the United States. High taxes have forced money from taxable securities into non-taxable investments according to the report.

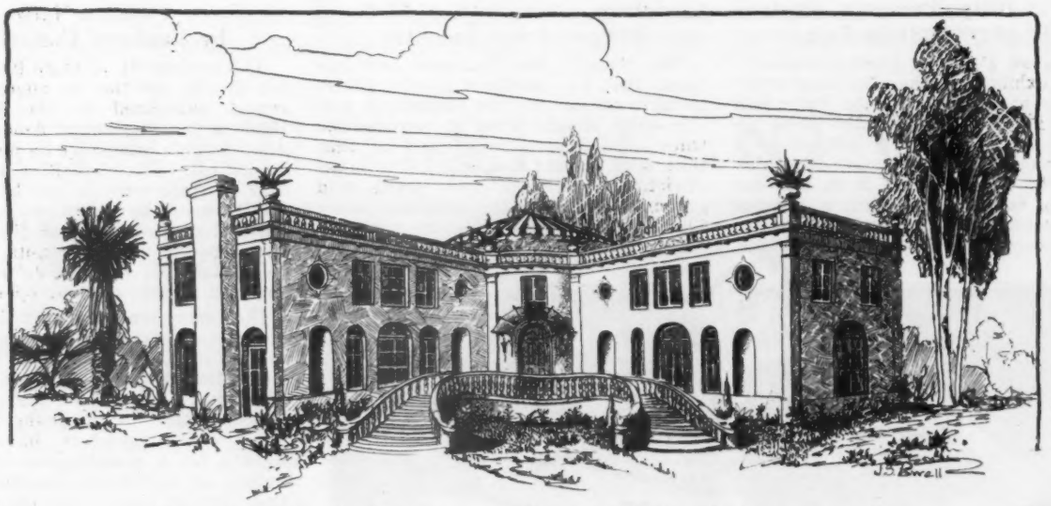
San Francisco Representative Opens New Building

Maydwell & Hartzell, Inc., San Francisco representatives of automotive, electrical and hardware manufacturers, has recently moved to a new location at 158 Eleventh Street in that city. In this building the offices and warehouse of the concern will be consolidated.

The company has announced that by the consolidating of the offices and warehouse in one building it will be better able to serve its customers. In the new location a specialist will be employed to supervise each department.

The San Francisco section of the American Society of Mechanical Engineers will hold a joint meeting with the University of California student branch of the organization on the university campus at Berkeley, Calif., on Nov. 27. F. H. Cherry will speak on "Electrolysis, or the Electrical Resistance of a Film of Oil." Professor LeConte, of the University of California, will speak on "A Research Problem in Hydraulics." In addition to these two subjects, several of the seniors in mechanical and electrical engineering, will give brief statements of thesis problems upon which they are engaged.

Work on the American Falls Dam will be started about July 1, 1924, according to Guy Flenner, managing director of the Idaho Reclamation Association. The work of moving houses from the old townsite of American Falls, Idaho, will be started about the first of the year. Four hundred and fifty buildings will have to be removed before the dam can be built. It is estimated that about eight hundred thousand dollars will be spent in the neighborhood of American Falls during the next year.



The all-electric home "under the Cross at Hollywood," dedicated under the auspices of the California Electrical Cooperative Campaign.

New Electric Home Will Be Built in Hollywood

Laying of Cornerstone for All-Electric Home Attracts Large Amount of Attention in Southern California City

The all-electric home is no longer a novelty in the West but has instead reached the point of great popularity. Few of the major cities or towns but that have within their limits one or more of these up-to-date residences and they are built and absorbed into the community without comment. However, occasionally there is one of these homes so notable in its conception and planning that it is made a special event. Such a one is the new electric home "under the cross at Hollywood."

Preceded by a benediction offered by the Rev. Neal Dodd, this newest all-electric home was dedicated on Sunday afternoon, Oct. 14. The house is located on one of the beautiful foothills of Hollywood.

The dedicatory exercises for the occasion were under the auspices of the California Electrical Cooperative Campaign and were successfully arranged by Frank W. Smith, southern California representative of that organization. Carl Bush, president of the Hollywood Chamber of Commerce, presided and after a brief address on the development of Hollywood introduced in turn the various speakers of the day. The first speaker was Harry L. Harper, Los Angeles manager, Western Electric Company, who reviewed briefly the history of electrical development and of its application to commerce and the home. Mr. Harper pointed out clearly the many comforts which electricity had provided for the home and noted the improvement in living conditions in all communities where electricity was available for domestic use.

Mr. Harper was followed by William Chapin, secretary of the Hollywood Hills Association, who spoke briefly on the necessity for modern homes for the multitudes of people who are taking up life in the West. He also told of the efforts of the association to make Hollywood a place of homes for people of stability and stated that electricity in its domestic application offered one of the most effective means to that end. Burdett Moody, of the Bureau of Power and Light, Los Angeles, spoke on the generation, transmission, distribution and domestic application of electricity.

An unusual feature of the dedication of this home was the laying of the corner stone. This was conducted under the direction of Mr. Bush who first placed within the vault provided a sealed metal box containing the following: copies of the daily papers of Oct. 13, 1923; a copy of the electrical specifications of the City of Los Angeles; a copy of the Journal of Electricity issue of Oct. 1, 1923; copies of Electrical Merchandising, The Delineator and other modern home magazines. It is planned to allow these papers to remain in the vault until Oct. 14, 1943, and then to remove them and to compare the data and practice of this date with the practice of twenty years hence. It is expected that development will by that time be so extensive that there will then be no home which is not completely electrified and that such a feature as the laying of a corner stone in an all-electric home will be indicative, in retrospect, of the progress which has been made.

Much of the success of the occasion is due to Howard L. Reed, the architectural builder who planned and designed the home and who cooperated gladly not only for the complete electrification of the building but also for the dedicatory exercises.

Tieing in with Mr. Reed's efforts, the California Electrical Cooperative Campaign issued several hundreds of invitations to the dedication and also prepared circulars descriptive of the property which were distributed and mailed in large quantities. The event was also advertised in the newspapers and was also treated by the papers as a distinctive news event. Photographers were sent to secure pictures of the ceremonies. In addition, and in order to bring the matter to the attention of the entire electrical fraternity in the city, a full page in "Sparks"—the organ of the Los Angeles Electric Club—was given to the announcement of the exercises and the

Analysis Made of Residential Consumers' Accounts

That the average residential consumer who uses an electric range and water heater on the lines of The Washington Water Power Company pays a monthly bill of $9.18 is the conclusion that the company has reached as the result of an analysis of these accounts. The survey was made on accounts for the month of March, 1923, and covered a total of 473 residential consumers using both range and water heater. The accounts were selected at random and represent approximately 10 per cent of the consumers of the company that are using electric ranges and water heaters.

The analysis showed that the average residential consumption per month was 195 kw-hr. and that the consumption varied from 48 kw-hr. to 756 kw-hr. The average bill for electric service, exclusive of service to electric water heaters, was found to be $6.65 per month. The average charge for service to water heaters was $2.53.

New Street Lighting System to Be Installed in Roseburg

Work on the new street lighting system of the city of Roseburg, Ore., is being rushed in order that the city may have the benefit of the installation during the coming Christmas season. Sixty Westinghouse ornamental street lighting units with capital extensions and Monex glass are to be installed. Each post will carry 400 cp. and will be placed so as to give a total of 3,200 cp. to the block.

The energy will be supplied by a 2,300-volt underground series system, each post carrying its own transformer. The Hudson Electric Company of Roseburg is doing the work and expects to have the system in operation before Dec. 1.

The Pacific Power & Light Company is having the Grant Smith Company test the bed rock of the Deschutes River in the vicinity of The Dalles, Ore., for a dam in connection with the power site for the company. Construction of the new power plant will start soon.

New Type Electric Dredges Are Operating in California

The first electric dredges of their kind to be operated in California are being used in the construction of the huge levees which will protect the district in the vicinity of Meridian, Calif., from the flood waters of the Sacramento River and Butte Creek. These three dredges will handle something over 1,250,000 cu. yd. of material before the work is completed.

To supply power for these dredges it was necessary for the Pacific Gas and Electric Company to build a high tension line five miles long. Portable transformer sets, mounted on trucks, are used to step down the voltage and these trucks will be moved from time to time as the work progresses. The pole line itself will also be moved as necessary.

The machines are of 200 and 250-hp. capacity and handle from five to six cu. yd. of material at a scoop. Each dredge is operated by one man who handles an average of one bucket of earth per minute. Time is taken four times a day for moving the dredge and for meals and an hourly average of 250 cu. yd. of material is consistently maintained for each machine. This material is taken from the pit and lifted onto the levee.

The range of boom varies on the dredges from 100 ft. to 140 ft. and one machine follows the other. When the last machine has worked on a section the embankment is complete and the top of the levee is evened and crowned as the work proceeds in order to prevent water standing thereon.

Travelers Are Served by Power Company's Fountain

In an endeavor to beautify the surroundings of the operators' cottages at the Malad power plant of the Idaho Power Company, near Bliss, Idaho, that company has recently cleared a plot of ground and has put it under fence. Boulders and sagebrush were taken from the plot and it has been seeded with blue grass.

At the corner of the plot, which adjoins the state highway, a public drinking fountain has been erected. The fountain is built of native lava rock set in black mortar with joints outlined in white. Two bubbling fountains supply cool spring water and from the pool the tourist may secure water for any purpose.

The fountain carries a sign which states that this is the site of the Malad Plant of the Idaho Power Company and gives the distance to various cities which are located along the highway. These signs, as well as the fountain itself, are illuminated at night making the fountain serviceable twenty-four hours of the day. Considerable favorable comment has been caused by the installation of the fountain and the cleared plot for which the Idaho Power Company is responsible.

Site of the Malad Power House of the Idaho Power Company, showing the fountain and grass plot that have recently been placed between the operators' cottages and the highway.

New home of the Baker-Joslyn Company in San Francisco.

Orders booked by the Western Electric Company in the first nine months of 1923 totaled $211,185,000, or $77,064,000 more than those in the corresponding period of 1922. Billings aggregated $178,750,000, or $26,233,000 more than for the corresponding 1922 period. The foregoing billings were at the annual rate of $235,000,000, compared with $211,000,000 in 1922.

Robert M. Spurck, designing engineer, oil circuit breaker department of the General Electric Company, Schenectady, N. Y., was the guest of honor and speaker at the Nov. 2 meeting of the Denver section of the American Institute of Electrical Engineers. Mr. Spurck spoke on "Design and Characteristics of Oil Circuit Breakers." The talk was illustrated with lantern slides.

Three-Story Building Occupied by Baker-Joslyn Company

The Baker-Joslyn Company has recently moved into new quarters in San Francisco. The company has had built for it a specially designed three-story and basement building at 490 Second Street and will maintain all of its San Francisco offices and stock in this location.

The basement of the new building is used for storing heavy pole line hardware and insulators while the lighter equipment that is stocked by the concern is warehoused on the main and second floors. The third floor will be used as a reserve space for the present, but is suitable for storing stock when conditions necessitate.

Offices of the concern are located on the second floor. These are all heated electrically and the company has paid particular attention to the lighting of these offices.

The shipping department is located on the main floor and has four doors at which trucks may be loaded. A spur track is adjacent to two of these entrances and cars may be unloaded directly to either the first floor or the basement. Trucks may also unload at a basement entrance.

To Install Electric Hand Dryers in Seattle Building

Twenty-eight Airdry machines will be installed in the Dexter Horton Bank Building in Seattle, Wash., when that building is completed. The machines are designed to eliminate the use of towels as they supply warm air that may be directed to dry either the hands or the face.

The machines are operated entirely by electricity and are designed to operate with a low consumption of current. The manufacturer of the "electric towel" claims that by using the machines, in place of fabric or paper towels, a saving of between 50 and 70 per cent may be effected.

The Dexter Horton Bank Building is the latest of the larger buildings to specify the equipment. The installation was ordered after tests had been made covering a period of several years.

General Electric Company Makes Changes in Sales Branch

Important rearrangements of certain fields of work within the sales branch of the General Electric Company, involving a change of name of two departments, have recently been announced and became effective Nov. 1. In connection with these changes Dana R. Bullen, for a number of years manager of the supply department, has been advanced to the position of assistant vice-president on the staff of the vice-presidents in charge of sales of general apparatus and supplies.

What has hitherto been known as the lighting department becomes the central station department, and the name of the power and mining department is changed to industrial department.

C. W. Stone, manager of the former lighting department, will continue as manager of the central station department, M. O. Troy, formerly manager of the transformer sales department, is appointed executive assistant manager of the central station department, with headquarters at Schenectady, and W. M. Stearns, formerly one of the assistant managers of the supply department, becomes assistant manager of the central station department, in charge of the street lighting, miscellaneous switchboard device, holding companies contract, and miscellaneous supply and order sections.

R. D. Mure, assistant manager of the former lighting department, becomes assistant manager of the central station department in charge of apparatus sales. F. G. Vaughen and present staff are transferred to the central station department, and continue in charge of the meter business of the company, retaining the title of sales manager, meter department. Similarly, W. S. Clark and present staff, in charge of the company's wire and cable business, are transferred to the central station department.

The railway supply section and present staff, conducting the company's business on railway motor and control parts, railway line material and rail bonds, are transferred from the supply department, of which E. P. Waller is manager.

The industrial heating device, industrial control, mine locomotive and stationary motor repair parts, and Fabroil, Textoil and Textolite Gears sections of the supply department are transferred to the industrial department, of which A. R. Bush, manager of the department under its former name of power and mining department, continues in charge.

N. R. Birge, formerly one of the two assistant managers of the supply department, is assigned to the staff of the president of the company. Mr. Birge will assist in supervision of associated manufacturing companies, being associated with D. C. Durland in this work.

Portable Substations Built for Motion Picture Studio

Two portable electric substations each of which can supply 150 kw. of direct current, have been purchased from the Westinghouse Electric & Manufacturing Company, by M. C. Levee of the United Studios, Hollywood, Calif. Each of the portable substations is equipped with two 75-kw. d.c. generators; a 250-hp., 2,200 or 4,400-volt, three-phase, 50-cycle motor; a combination two-generator control panel; complete starting equipment for either 2,200 or 4,400-volt operation; a high tension tower and disconnect fuse blocks.

The substations will be used on the United Studios "lot" and on locations where direct current is not available. Each substation is mounted on a 10-ton Hercules trailer, which is fitted with special jacks so that the machines may be lifted from the body of the truck and supported directly on the road bed. An ordinary motor truck is used in towing the trailer from place to place.

By using the portable substations on the motion picture company's "lot" a considerable saving has been effected due to the fact that the necessity for installing a large amount of wiring has been eliminated.

The Washington Coast Utilities is planning extensive line improvements costing $20,000, according to R. U. Muffley, general manager of the company. In the commercial district of Port Townsend, Wash., the entire line service will be revised and will be done as opportunity permits. The manufacture of gas will be discontinued and in its place electricity will be substituted for cooking and heating at a rate considered eminently fair and just.

Application has been filed with the Washington state hydraulic engineer by E. C. Miller, of the Miller Engineering Company, Seattle, Wash., for a permit to use the waters of the South Fork of the Nooksack River for the development of hydroelectric energy. The project when completed will generate about 17,000 hp., according to present plans.

Electric Cooking School Is Held in Sacramento, Calif.

During the four days from Nov. 6 to 9, the Sacramento Bee held a free electrical cooking school in Sacramento, Calif. The classes were held from 2 to 4 each afternoon, in the Masonic Temple Auditorium.

Miss Bernice Lowen, home economist from the Chicago office of the Edison Electric Electric Appliance Company acted as instructor for the school. She came to Sacramento following a tour of Oregon and Washington where she has been conducting other electrical cooking schools.

A different menu was prepared each day by Miss Lowen, as she told her audience what to do to avoid the thousand and one little mistakes that cause cooking failures. A question box was provided at the hall so that individual problems might be discussed and answered by the instructor.

The culminating feature of the school was a baking contest held Nov. 9. The contest was divided into three divisions —bread, cake and pie. The prize list included a Hotpoint-Hughes super-automatic range, a Meadow Lark electric washing machine and a Columbia vacuum cleaner as the first award in the three sections.

Each day during the week, two pages of the Bee were devoted to the school, giving news articles, the menu for the day, prize list, rules, etc. The remaining space was taken by advertisers. Reports from electrical dealers in Sacramento indicate that the school has laid the foundation for a sales campaign on electric ranges, and that it has helped immensely in spreading the electrical message.

New portable substation which has been built for the United Studios for supplying direct current on locations where only alternating current is available.

Value of Seattle Substations Is Subject of Dispute

The Puget Sound Power & Light Company of Seattle, Wash., has requested Mayor Brown of Seattle to certify, on behalf of the city, that arbiters, who have been named to appraise two railway substations to be taken over by the city, cannot agree upon the selection of a third member. Both the City of Seattle and the power company named seven arbitrators. Each and all of these have been rejected by the other party. The Puget Sound Power & Light Company wishes to have the mayor certify that the third arbiter cannot be chosen in order that it may apply to Chief Justice John F. Main of the State Supreme Court to supply the third member. Mayor Brown, however, has been advised by T. J. L. Kennedy, corporation counsel, that he has no authority to certify this on behalf of the city, except under ordinance passed by the city council.

The three appraisers are to fix the value of the substations to be taken over by the city with the first block of 5,000 kw. of the power service now being sold to the municipal railway by the company. The contract by which the city bought the railway lines gave the city the right to reduce the contract in 5,000-kw. blocks, provided the city paid the company for the substations. The company has the right, on five years' notice, to reduce the power service without requiring the city to buy the substations. The city has served one year's notice of its intention to take over the first block and substations during this month.

Mayor Brown has recommended to the city council that the two substations be secured by the city through condemnation proceedings, since no success in arbitration has been obtained. The question of valuation of the two substations involves chiefly a question of obsolescence, the city asserting that the equipment in the substations is no longer standard.

Display Denver Electric Home to Public for a Week

Denver's next electric home, at 1635 east Seventh Avenue, is scheduled to be opened for public inspection by the Electrical Cooperative League of that city on Nov. 18. The home was built by the T. D. Harris Investment Company and was turned over to the League for exhibition purposes. It is a modest five-room bungalow with finished basement and is of the Colonial design. Interior decorations and furnishings are being provided by the Denver Dry Goods Company and electrically operated musical equipment has been furnished by the Knight-Campbell Music Company.

This is the second electric home featured by the Denver League, the first having been exhibited more than a year ago at Seventh Avenue and Clayton Street to some 37,000 people. The new home will be open to the public for one week's time preceded by a private showing to Denver architects and prominent builders.

Literature provided by The Society for Electrical Development, illustrating the wiring and lighting features, will be furnished all visitors to the new home. Thirty-five appliances furnished by jobber and distributor members are to be displayed during the exhibition. The wiring consists of 78 outlets, as follows: 21 convenience outlets, 25 switch outlets, and 32 lighting, 10 of which are bracket and 22 ceiling outlets. The installation includes six sets of 3-way switches.

Industries Exposition Will Be Open to Public Nov. 17

The third annual California Industries Exposition, to be held in the San Francisco Civic Auditorium, will be opened to the public on Nov. 17. For the first time in the history of the Exposition, the electrical industry will have a separate section in which its exhibits will be housed. This section, to be known as the Palace of Electricity, will be located in the Polk Street Hall of the Civic Auditorium.

Special effects both illuminative and decorative have been installed in the section assigned to the electrical industry and a particularly pleasing result has been obtained. Twenty-four concerns, representing the electrical industry, will have displays in the Palace of Electricity when it is opened to the public.

The Exposition will be open to visitors until Dec. 2. Special arrangements have been made for securing a large attendance during the showing of the articles on display.

Plan Recodification of Building Laws in Denver, Colo.

Plans are being made in Denver looking towards the complete recodification and revision of the building laws in that city. Principal factors justifying such a change are said to be the early adoption of a series of zoning laws and the necessary standardization of present building regulations.

The new electrical code of the national underwriters is considered another pertinent reason for the revision. Although the provisions of the new code have already been put into effect by C. F. Oehmler, chief electrical inspector, there are improvements which he believes can best be made by an entirely new set of regulations.

To assist in the development of the new local electrical code and to advise on other matters pertaining to the electrical inspection department, it is understood that Mr. Oehmler contemplates the appointment of an advisory board from the representative electrical interests of the city.

The completion of the El Dorado plant of the Western States Gas & Electric Company is anticipated to take place before Christmas, according to reports from the site. This plant will add 27,000 hp. to the generating capacity of the company. Twin Lakes Reservoir, impounding 20,000 acre-feet of water, is completed at the present time.

Manufacturer members of the Electrical Cooperative League of Denver, Colo., as the result of recommendations made at the group meeting last month, held a dinner meeting at the Denver Athletic Club, Nov. 6, at which representatives of twenty-five firms were present. Harry Randall, district manager of the General Electric Company, presided as chairman.

Books and Bulletins

PRINCIPLES OF DIRECT CURRENT MACHINES

By ALEXANDER S. LANGSDORF. 5½ x 8 in. $4. Published by McGraw-Hill Book Company, New York. 470 pages; 390 Figures.

This text book which is now in its third edition, is essentially a treatment of the fundamental principles underlying the design and the operation of all types of direct current machinery. According to the author—"while the book does not aim to be a text on design, it is unquestionably in the interest of thoroughness to place before the student, specific illustrations of applications of the general principles of the subject, which may hold his interest and enlarge his horizon, even though the field of design may not attract him as a life work."

The first sixty-six pages of the text are devoted to a comprehensive treatment of the general laws and definitions which are immediately applicable to the theory of direct current machines. The dynamo is treated in the second chapter wherein the outstanding features of operation and design are briefly pointed out. The next three chapters give a good analysis of armature windings, the magnetization curve and magnetic leakage and armature reaction. The operating characteristics of generators and of motors are then treated in detail. The use of curves plotted along three axes of coordinates for the purpose of illustrating the characteristics of direct current machines is of special interest, and serve their purpose admirably. An excellent presentation of commutation follows, fifty-five pages being devoted to this subject. Linked with this the next chapter treats of methods used for the compensation of armature reaction and improvement of commutation. Of particular interest to operating men is the next chapter which is devoted to efficiency, rating and heating. The text concludes with a description and an analysis of boosters, balancers and transmission lighting systems.

As an aid to a more thorough understanding of this important branch of electrical engineering, a collection of illustrative problems is included at the end of each of the first ten chapters.

In reviewing this text one is struck by the thorough treatment of each subject. The mathematical analysis is good, but in addition it is quite generally preceded by a full and well illustrated discussion of the physical facts to be dealt with and their relation to one another.

A book such as this one should not only be of value to students of electrical engineering, but to practicing engineers as well.

E.R.S.

The Bowie Switch Company of San Francisco has issued Bulletin No. 15 which contains a description of the company's line of high tension switching apparatus.

Meetings

Dr. Steinmetz Paid Tribute at Engineers' Luncheon

Eulogizing the life of the late Charles P. Steinmetz, C. R. Higson, assistant to the chief engineer of the Utah Power & Light Company, was the principal speaker at the weekly luncheon of the All-Engineers' Club at Salt Lake City, Utah, on Oct. 29.

Mr. Higson gave a biographical sketch of the career of Dr. Steinmetz. He dwelt especially on the human side of the noted electrical wizard, his simple habits and tastes and his love for companionship.

The speaker praised the tremendous mathematical and scientific prowess of the great electrical engineer, and lauded his texts, which, he said, are monuments to his memory.

R. M. Spurck, of Schenectady, who was a guest at the luncheon, said that he was indeed glad that the speaker brought out the human elements, as Dr. Steinmetz was human and kind, mixed with the boys, and was well regarded by them.

The Engineering Council of Utah was asked, in a motion passed at the meeting, to prepare a set of resolutions in behalf of the luncheon club, in appreciation of the life of Dr. Steinmetz, in addition to the resolutions which it had already prepared on its own account.

Women Urged to Electrify Homes by Hallowe'en Speaker

If Hallowe'en once stood for superstition, the Electric Club of San Diego, Calif., forever shed light on the occasion when it gave its first social affair of the season on Oct. 31, at the San Diego Hotel.

Carl Heilbron, chosen as the speaker of the evening, addressed himself to the women present in his talk on "The Part of Electricity in the Building of San Diego." He related the history of the early struggles of the street railway company, the gas and electric company and the telephone company, and lauded the present workings of those utilities.

Then carrying his message to the home, for which he declared the whole industry existed, he urged the wives of electrical men to make their homes and the homes of the city electrical. Industry, he said, was approaching its saturation point of possible electrification, but the home, he declared, was only from 10 to 15 per cent saturated.

"Not one man in a thousand gives the thought that he does to his business to the comfort and convenience of his home. I'll venture to challenge that not 33 per cent of the homes of electrical men are fully electric homes. It is up to you women," he continued. "You can get it if you want it. Make your home the real electric home that it ought to be and you will make your home a comfortable and convenient home."

Fay Smalley, chairman of the program committee and in charge of the evening's program, also introduced E. J. Burns, assistant general manager of the street railway company. Mr. Burns made a prediction that the beach sections of San Diego, through which his company is to run a new rapid transit line, would develop $5,000,000 in the building of homes and business houses of which the electrical industry should certainly get its share if alive to the possibilities.

Denver Electrical League Holds Hallowe'en Meeting

One hundred and twenty-eight electrical men of Denver, Colo., were guests of the Electrical Cooperative League of that city at the Metropole Hotel party and Hallowe'en dinner staged by that organization recently. The program was arranged by the entertainment committee of the League organization and was one of business and entertainment both. It was declared to be one of the most successful gatherings ever staged by the Denver League organization. O. L. Mackell, chairman of the League, presided.

Drawing of appliances by jobber members in connection with the appliance display of the League's electrical home, was one of the closing features of the party. Among the speakers of the evening were Clare N. Stannard, first vice-president and general manager of the newly formed Public Service Company of Colorado; John F. Greenawalt, representing the Mountain States Telephone & Telegraph Company; L. A. Barley, chief engineer of the Mountain States Inspection Bureau, who discussed the features of the 1923 Electrical Code of the National Board of Fire Underwriters; J. C. Davidson, manager of the electrical department of the Hendrie & Bolthoff Manufacturing & Supply Company; Harry Randall, district manager of the General Electric Company; A. C. Cornell, manager of the Western Electric Company; T. D. Harris, builder of the home to be used by the Electrical Cooperative League for exhibition purposes; S. W. Bishop, executive manager of the Denver League, and Frank J. McEniry, field representative.

COMING EVENTS

California Industries Exposition—
Exposition Auditorium—San Francisco, Calif.
Nov. 17-Dec. 2, 1923

Commercial Section, Rocky Mountain Division, National Electric Light Association—
Commercial Section Meeting—
Salt Lake City, Utah
Nov. 21-22, 1923

American Society of Mechanical Engineers—
Annual Meeting—New York, N. Y.
Dec. 3-6, 1923

A two-day convention of the Commercial Section of the Rocky Mountain Division of the National Electric Light Association will be held in Salt Lake City, Utah, Nov. 21-22. Prominent executives from central station companies throughout the country have been asked to attend the meetings.

Electric Wiring Standards Are Discussed at Meetings

The Rocky Mountain division of the National Electric Light Association has just completed the experiment of a new committee activity occasioned by the publication of the new electrical code by the National Board of Fire Underwriters and the necessity of higher wiring standards in that geographic division, according to a recent report of D. C. McClure, division president.

Not that electric wiring installations are not up to the standard of other sections of the country in the states of Wyoming, Colorado, and New Mexico, but rather to emphasize the necessity of maximum rather than minimum standards, as prescribed by the code, is understood as being the occasion for tying-in the work of the divisional wiring committee with that of the fire underwriters in that section.

The activity thus far has taken the form of special meetings at Cheyenne, Wyo., and Greeley, Colo., attended by all of the local electrical men in those cities, the electrical inspectors, central station representatives, architects, and city officials. In company with L. A. Barley, chief engineer of the Mountain States Inspection Bureau, S. W. Bishop, manager of the Electrical Cooperative League of Denver and chairman of the division wiring committee, attended and addressed these meetings.

The work of the national organization, especially the wiring committee of which Mr. Bishop is a member, and its relationship to some of the improvements effected in the new code were explained, as was the necessity of providing complete and efficient wiring installations looking towards the complete satisfaction of the customer and consumer.

Portland Engineers Hold Joint Evening Discussion

The recent opening meeting of the Portland, Ore., sections of the American Institute of Electrical Engineers and the National Electric Light Association was a decided success. The two societies met in joint session as is the custom in Portland, thereby insuring a big crowd. The attendance was about eighty.

Prof. E. E. F. Creighton, research engineer of the General Electric Company, gave a most interesting talk on "Lighting and Continuity of Service." Mr. Creighton is well qualified to talk on this subject, having spent many years in the laboratories of the largest electrical manufacturers in studying high voltage phenomena.

Francis H. Murphy, illuminating engineer with the Portland Railway Light & Power Company and an active member in both societies, gave a short talk on the "Relationship of the Local Sections of the American Institute of Electrical Engineers and National Electric Light Association to Their Parent Organizations, and to the Oregon Technical Council."

The Sacramento Valley Electrical Society held a special get-together meeting at the Hotel Land, Sacramento, Calif., on Nov. 14. A large group of electrical men from the Sacramento Valley and outside cities was present.

Manufacturer, Dealer and Jobber Activities

The Denver Sewing Machine Company, 1521 Champa Street, is the latest entry in the appliance selling field in Denver, Solo. In addition to handling the White sewing machine the company represents the Maytag Washer Company. A line of heating appliances and lamps is also carried.

The P. A. Geier Company, Cleveland, Ohio, has recently appointed N. A. Barnell assistant sales manager of the company. Mr. Barnell is, in point of service, the third oldest member of the Geier sales organization.

W. A. Jones Foundry & Machine Company, Chicago, Ill., has recently published Catalogs No. 27 and L-28. The former catalog gives information concerning cast iron pulleys, "Lemley" ball bearing pulleys, and ring oiling loose pulleys. Steel, wood and paper pulleys are also listed. Friction clutches are the subject of the second catalog. Copies of the catalogs may be secured by addressing the company.

The F. W. Wakefield Brass Company of Vermillion, Ohio, recently prepared for distribution a small leaflet entitled, "Electric Daylight in Your Kitchen." The leaflet is suitable for distribution to consumers. Copies may be secured from the manufacturer of the equipment.

The Benjamin Electric Manufacturing Company, Chicago, Ill., has recently prepared Bulletin No. 52, which is devoted to industrial lighting equipment. In addition to the general catalog material, the 80-page booklet contains an extensive series of illustrations showing correct illumination in industrial plants of all types. There is also a section devoted to the philosophy of good lighting as an industrial necessity, an essay on the requirements of good illumination, a discussion of the important points to consider, the use of charts and a demonstration of making the more simple calculations for correct industrial illumination.

The Fulton Iron Works, St. Louis, Mo., has recently published Catalog No. 805. The book is devoted to a description of the Fulton-Diesel oil engine. The catalog contains a number of illustrations showing the engine installed on various projects.

The National Tube Company, Pittsburgh, Pa., has recently published a booklet entitled, "The Seven Wonders of Wrought Pipe." The booklet contains the records of seven incidents in which pipe was subjected to extreme conditions and stood up under the strain.

The Edwin F. Guth Company, St. Louis, Mo., has recently put on the market a new standardized fixture for lighting homes, hotels, clubs and similar locations. The new fixture is known as "Mazelite" and is equipped with a 12-in. reflector and a bowl 6¼ in. in diameter. The bowl is made of extra dense ivory tinted glass and the reflector is finished in oxidized silver with gold high lights. The fixture is designed for close ceiling mounting thus making it adaptable to rooms with low ceilings.

The Duncan Electric Manufacturing Company, of Lafayette, Ind., has recently announced the appointment of two new district sales agents. Walter W. Gaskill, Boston, Mass., has been appointed the district sales agent for the New England territory and A. F. Blecksmith, 534 Bryson Building, Los Angeles, Calif., will act as the district sales agent for the territory comprising California, Nevada and Arizona. E. H. Albrecht, 310 Lewis Building, Portland, Ore., will continue to represent the company in the Washington-Oregon territory. The company is the manufacturer of electric meters and distribution transformers.

The American Time-Switch Company, Cleveland, Ohio, has recently prepared for distribution Folder B, which contains matter giving the uses, description, operation and types of the American time switch clock. The clock is equipped with a spring motor, separate from the timing apparatus of the device, which is powerful enough to turn the switch instantly. The device will turn on and off electric currents at any time that may be determined beforehand.

The Doble Engineering Company, Boston, Mass., has transferred its offices to 110 Brookline Street, Cambridge, Mass., where increased space for all phases of the company's business and close contact between office and factory will be available. F. C. Doble states that interest in live line insulator testing is increasing throughout the country among both operating organizations and insulator manufacturers.

The National X-Ray Reflector Company, Chicago, Ill., has recently developed a new portable flood light, with a center spot beam, which is for use on large display work. The new unit is also suitable for use wherever a portable flood light is needed. There are two sizes of the new unit, the smaller of these using a 200-watt Mazda C lamp. This size can be used for either white or colored lighting. The larger size unit uses a 500-watt Mazda C lamp and is for white lighting only.

The Wagner Electric Corporation, St. Louis, Mo., has recently prepared for distribution Bulletin No. 134. This bulletin is devoted to the description of the new Fynn-Weichsel motor that is being manufactured by that company. This new motor is designed to correct power factor where induction motors are installed in industrial plants. The new motor operates as a slip ring induction motor at synchronous speed and starts as a slip-ring induction motor, having starting torque characteristics such that it will develop 150 per cent torque with a starting current of from 150 to 200 per cent. After the motor attains synchronous speed it becomes a self-excited synchronous induction motor, the excitation varying automatically with the load. With appropriate windings the motor can be made to operate at unity power factor, or with a definite leading power factor to compensate for lagging current taken by other motors on the same line. The motor will carry 150 per cent load without falling out of step and above this it acts as an ordinary slip-ring induction motor.

The Trumbull Electric Manufacturing Company, Plainville, Conn., has just issued its Bulletin No. 5. This bulletin is of particular interest to the trade and deals with the new motor switches and new entrance switches which the company has just produced. It also shows that the Type A switch is now made in quick make and quick break. The catalog will be furnished as rapidly as possible through jobbers.

The Reliance Electric & Engineering Company, Cleveland, Ohio, has prepared for free distribution a 51-page booklet entitled "Anti-Friction Bearings in the Steel Mill." The booklet is a reprint of a paper presented before the Association of Iron and Steel Electrical Engineers by A. M. MacCutcheon, chief engineer of the Reliance Electric & Engineering Company. The booklet also contains the discussion that was presented on the paper at the time of its presentation. The paper and discussion deal largely with bearings used in electric motors.

The future executives and engineers of the Westinghouse Electric & Manufacturing Company had a good time at the annual picnic held in the Denver mountain parks recently. The little fellow on the left is crying for his "Cosy-Glow."

Personals

Clare N. Stannard, who has just been elected vice-president and general manager of the newly formed Public Service Company of Colorado, is well known to the electrical fraternity of the entire country. He entered the public utility business when he was 21 years old and,

CLARE N. STANNARD

after eight years with various electric and street railway companies, joined the force of the Denver Gas and Electric Light Company. After 24 years' service, during which time he held many different positions in the cashier's and commercial departments, he was made vice-president and general manager. Upon the formation of the Public Service Company of Colorado, by the consolidation of the Denver Gas and Electric Light Company, the Western Light & Power Company and the Lakeside Construction Company, he was elected vice-president and general manager. Under his administration the Denver Gas and Electric Light Company has made notable strides in development and has established itself in the goodwill of the public. Mr. Standard is an active member of the Denver Civic Club, the Rotary Club and other progressive civic and commercial associations.

C. L. Clevenger, for several years with the California Oregon Power Company at Grants Pass, Ore., has recently opened a retail electrical establishment in that city.

Bert L. Perry, formerly engaged in the electrical business in Edmonton, Alberta, has moved to Los Angeles, Calif., and has been made assistant general manager of Gans Brothers Electrical Company.

L. J. Smith, of the Packard Electric Company, Warren, Ohio, and whose headquarters are at 451 East Third Street, Los Angeles, Calif., was a recent visitor to San Francisco on business for his firm.

A. R. Miller, Portland, Ore., district manager for the National Carbon Company, Inc., San Francisco, Calif., has resigned from that company to enter the radio field.

L. B. Robinson, transformer specialist for the General Electric Company, Schenectady, N. Y., is in Seattle, Wash., on business for his company.

Tom H. Rhodes, formerly salesman with the Western Electric Company, Los Angeles, Calif., is now in the real estate business with the Frank Meline Company.

E. L. Booth has recently joined the Los Angeles, Calif., office of the Western Electric Company as specialty appliance salesman, in the supply division. Prior to coming to Los Angeles Mr. Booth was for thirteen years with the Edison Electric Illuminating Company of Boston. His service with that company was principally in the sales department and also as district manager.

Carl J. Andrae, Julius Andrae & Sons, Milwaukee, Wis., and **Fred Schmidt**, of the same company, were recent visitors to Los Angeles, passing through the latter city on their way back to Milwaukee from the American Legion convention in San Francisco.

A. K. Baylor and **G. E. Emons**, of the General Electric Company, were recent visitors to Los Angeles. Mr. Emons is vice-president in charge of manufacturing at Schenectady. Mr. Baylor is a member of the board of directors of the Edison Electric Appliance Company and of the Electric Vacuum Cleaner Company. During their stay in Los Angeles they attended a meeting of the Los Angeles Electric Club.

Tracy Simpson, of the Federal Electric Company, San Francisco, Calif., has resigned from that company to become western district manager of the Bonded Floors Company. His territory will embrace all that section of the country from Denver, Colo., to the Pacific Coast.

D. C. McClure, electrical superintendent, and **F. F. McCammon**, power sales engineer, both of the Public Service Company of Colorado, have been appointed as members of the Rocky Mountain Committee on Public Utility Information, of which **W. C. Sterne** is chairman. Mr. McCammon, as representing the committee, addressed the University Club of Canon City, Colo., Oct. 17, on "The Economic Phases of the Electric Power Industry."

J. A. Kahn and **R. C. Nash** of the Capital Electric Company, Salt Lake City, Utah, after short business trips to Idaho and Montana, respectively, have returned to Salt Lake City.

S. Rosenfield of the United Electric Supply Company, Salt Lake City, Utah, is in Denver on a business trip.

A. L. Maul, assistant auditor in the New York office of the supervisor of incandescent lamps of General Electric Company, was a visitor to Salt Lake City, Oct. 8-10.

J. E. Crilly, Pacific district line material manager of the Western Electric Company, San Francisco, Calif., was a recent Los Angeles visitor, going over the local field with the representatives in that section.

H. W. Young, president, Delta-Star Electric Company, Chicago, Ill., accompanied by Mrs. Young, sailed Nov. 3 on the Majestic for Paris, where he will present a paper on American High Tension Outdoor Substation Practice before the International High Tension Congress. Following this, several foreign cities will be visited to investigate the latest European high tension practice.

C. G. A. Baker, of Baker-Joslyn Company, San Francisco, Calif., with Mrs. Baker is on an extended trip east. During his absence he will visit the various factories whose equipment his company sells.

James R. McCormack has recently been appointed Los Angeles manager of the Scheeline Manufacturing Company with offices in the Metropolitan Building, Los Angeles, Calif.

Theodore G. Parker, of the Golden State Electric Company, Los Angeles, Calif., was a recent visitor to San Francisco on business for his firm.

P. E. Matteson, formerly president and general manager of the Tidewater Electric Company, New York, is now sales manager for the Inter-Mountain Electric Company, Salt Lake City, Utah.

S. C. Ells, of the department of mines, Dominion of Canada, is in Denver, Colo., investigating the method of treatment of oil sands and oil shales.

Francis C. Shenehon, of the H. M. Byllesby Engineering Corporation, is on a visit to the Coast to inspect various projects of the company. During his trip he will devote special attention to the El Dorado project on the American River.

Emmet N. Britton, assistant to the general manager, San Joaquin Light & Power Company, Fresno, Calif., has resigned from that position to join the King-Knight Company, Balboa Building, San Francisco, Calif. In his new work Mr. Britton will take an active part in the operations of his firm which does a general manufacturers' agency and engineering business. Mr. Britton was educated at University of California, class of 1914, and immediately after leaving college went to work for the Pacific Gas and Electric Company, rising to the position of superintendent of gas distribution. At the outbreak of the war he volunteered and served as first lieutenant of the 363rd Regiment

EMMET N. BRITTON

in the First Battalion. On his return from the war he became managing editor of the Journal of Electricity which position he held until becoming connected with the San Joaquin Light & Power Company. Mr. Britton is the son of the late John A. Britton, formerly general manager of the Pacific Gas and Electric Company and one of the outstanding figures of the electrical industry, not only of the West but of the entire country.

Oliver E. Sholders, who has recently been appointed sales engineer in charge of domestic applications for the Pacific Gas and Electric Company, San Francisco, Calif., was born near Kansas City, Mo., April 11, 1883. He was educated in the schools of Missouri and later entered the wholesale dry goods business in Kansas City. Some time later he resigned from this business and became divisional sales manager for a large New York manufacturer of food products, in charge of a southern division. In 1907, prompted by a desire to come to California, he resigned and entered the employ of a manufacturer of confectioners' specialties, remaining in this work some time after being made division sales manager for six western states. He joined the sales force of the Pacific Gas and Electric Company in 1921 and has held various positions in the sales and new business departments. Mr. Sholders has a wide acquaintance among the electrical trade and is well equipped by experience for his new work.

OLIVER E. SHOLDERS

H. M. Byllesby and **T. J. McGrath,** of H. M. Byllesby & Company, Chicago, Ill., were recently in San Francisco. They visited the various properties of the company on the Pacific Coast and spent some time in contemplation of operations.

F. E. Weymouth, chief engineer for the United States Reclamation Service, has been holding conferences in Salt Lake City, Utah, with William M. Green, engineer of the service in charge of reclamation investigation in Utah, with the object of making definite recommendations in regard to reclamation projects in Salt Lake, Davis, Tooele, Utah and Weber Counties. It is understood that Mr. Weymouth will prepare several plans involving a certain scope. These will probably be submitted, and the extent to which the reclamation work will be carried out will depend upon the size of the appropriation Congress may make.

Robert Miller, W. A. Moser, A. J. Calloway, P. M. Parry and **G. R. Randall** are the Salt Lake City, Utah, representatives of the Joint Committee for Business Development. **M. L. Cummings,** of the Utah Power & Light Company, is the publicity correspondent for that section.

Dr. Walter E. Boveri, director of Brown-Boveri & Company, Switzerland, is on the Pacific Coast in the interests of his firm. It is understood that his company contemplates the opening of a factory in this territory.

Robert M. Spurck, designing engineer of the oil circuit breaker department of the General Electric Company, Schenectady, N. Y., addressed the Denver, Colo., section of the A.I.E.E. at the Adams Hotel on Nov. 2. Mr. Spurck spoke on "Design and Characteristics of Oil Circuit Breakers" and his talk was splendidly illustrated with special lantern slides.

C. G. DuBois of New York, president, **A. J. Wallace,** Pacific district manager, **F. B. Gleason,** general sales manager, New York, and **P. M. Rainey,** radio sales manager, of the Western Electric Company, were recent Los Angeles visitors and while in that city were entertained at a banquet in their honor at the Biltmore Hotel given by the Western Electric Company employees of Los Angeles. A very interesting program was arranged for them which included talks by those present, together with a musical program arranged by J. G. Loomer of that company.

Ralph J. Cordiner, of The Edison Electric Appliance Company, Portland, Ore., is spending several weeks in Spokane in connection with sales of Hotpoint-Hughes electric ranges in that territory. Mr. Cordiner states that six of the leading power companies in the northwest are now conducting range campaigns and that the sales already made indicate that a great success is to be attained. This is the first time that such campaigns have been carried out in the autumn months, and the results confirm Mr. Cordiner's conviction that the market for electric ranges is one that is open throughout the year, and merely needs stimulation to be productive.

A. V. Kipp, traffic manager of the Salt Lake & Utah Railroad, has been appointed assistant general freight agent of the Oregon Short Line. Mr. Kipp has been traffic manager of the Salt Lake & Utah Railroad since March 1, 1921. For six months prior he served as general freight and passenger agent for the road. He has been constantly connected with railroads of the West since he entered the service of the Union Pacific at Omaha in 1902 as telegraph operator. He consecutively became chief operator at the Omaha office, traffic agent for shipments in Wyoming, traveling freight agent with headquarters in Denver, and contracting freight agent for Denver. During the war he had charge of the traffic department of the United States food administration for Colorado. Mr. Kipp's successor has not yet been named.

C. D. Wood, formerly division foreman of the Pocatello Division, Idaho Power Company, is now division superintendent of the Siskiyou Division, California Oregon Power Company, Yreka, Calif. Mr. Wood replaces **O. C. Failing** who goes to the head office of the company at Medford, Ore., as chief meter engineer.

R. C. W. Libbey, of the Simplex Electric Heating Company, Cambridge, Mass., has returned to his San Francisco headquarters after several weeks spent in an intensive sales campaign in southern California.

G. R. Randall, of the Salt Lake Electric Supply Company, Salt Lake City, Utah, has recently returned from a business trip to Pocatello, Ida.

Frank Pollard of the miniature and automobile lamp department of the Edison Lamp Works, Harrison, N. J., is in Salt Lake City to assist the automobile interests in the sale of lamps.

A. B. Oday, illuminating engineer of the Edison Lamp Works, Harrison, N. J., and **H. G. Meredith,** lighting engineer of the Ivanhoe Regent Metal Works, Cleveland, Ohio, are spending several weeks in Salt Lake City for the purpose of assisting in the work of promoting better lighting among the merchants of Salt Lake City and Utah. They plan, in connection with their work, to speak and give demonstrations before various gatherings of engineers, electragists, architects, merchants, clubs, etc.

H. A. Lane of the Joint Committee for Business Development will be in attendance at the N.E.L.A. Convention to be held in Salt Lake City, Utah, Nov. 21-22.

E. A. Evans, Westinghouse Lamp Company, has returned to Salt Lake City from a ten-day trip to the coast. He attended a meeting of the Pacific Coast division representatives of the Westinghouse Lamp Company held in San Francisco, visited the electrical jobbers in Portland, Ore., and also the Idaho territory where he found the electrical dealers most optimistic and crops very good.

T. E. Reger, of the Frank Wolcott Manufacturing Company, New Haven, Conn., is making an extensive trip to all the major Pacific Coast cities. He has recently been in San Francisco and will later proceed to the Northwest.

Harry J. Martin, Seattle manager of the National Carbon Company, Inc., is the new president of the Electric Club of Seattle, succeeding W. E. Jones. Mr. Martin has been identified with the National Carbon Company for the past ten years, three years of this time in Seattle, the remainder in San Francisco and Salt Lake City. He has been a member of the Electric Club of Seattle since its inception and has always been an active worker. During the recent Electrical Home exposition, as chairman of the reception committee, he was constantly in attendance. Mr. Martin was born in Illinois but came to the coast several years ago. He has been in the electrical business ever since and has an extensive acquaintance in electrical trade circles.

HARRY J. MARTIN

Trade Outlook

San Francisco

Sales continue to show a satisfactory increase over last year and future prospects are good. Building construction continues apparently without let-up and labor is well employed.

Fruit and rice shipments have been heavy releasing considerable capital for other purposes. Banks have generous cash reserves and country banks have reduced their demands on the Federal Reserve for assistance.

Export business continues rather quiet and no immediate improvement is expected. Extensive construction of electric and gas utilities is under way, occasioned by community growth and the increased demand for these services.

Manufacturing continues active with many factories striving to catch up with unfilled orders. This is particularly true of electrical heating equipment companies.

Appliance business is good and some jobbers report difficulty in securing stock.

Los Angeles

Manufacturers report excellent business prevailing with no prospects of diminishing. Wholesale business is also keeping up well particularly in the supply lines, due to the enormous building program which is under way in southern California. The wholesale business as relates to the oil industry has not been improved any during the past few weeks and prospects of its increasing prior to the first of the year are not bright.

Manufacturers of electrical water heaters report a slowing up in the demand for this type of apparatus. Electrical retailers report an increase of business with even better prospects as the Christmas season approaches. Radio sales are picking up slowly.

Building permits for October totaled $20,541,872.

No let-up in building progress is indicated in announcements made this week for new structures for the near future in Los Angeles.

An increase of $60,622.17 was shown in October post office receipts which totaled $600,759.94, according to Postmaster P. P. O'Brien. The report of Collector of Customs Lewis H. Schwaebe showed that collections for the month reached $439,695.69, the highest in the history of this Port.

Portland

Exports valued at $7,931,817 cleared from Portland during October, this being the largest in the past three years. Shipments were principally lumber, flour, wheat, dried and fresh fruits.

The activity of the lumber mills is being maintained at its high level of better than 20 per cent above normal. Prices remain firm. Fifty-six per cent of all new business taken during the week ending Oct. 27 was for future water delivery. California is by far the largest buyer.

Residences are building in all parts of the city. During October a total of 1,626 permits were issued, valued at $1,950,435, which is 12 per cent above the same month a year ago.

On Oct. 29 the electrical workers of the Northwestern Electric Company left their work in an attempt to enforce their demands for higher wages. This affected 120 men directly, and will if continued, seriously handicap the power company. The situation is being closely watched by the Portland Railway, Light & Power Company whose agreement with the unions expired on Oct. 31.

Salt Lake City

Movement of the great agricultural crops of Utah and Idaho to market is now well under way. Prices for these crops are good, and the new capital received in payment for these crops will improve the financial condition of the intermountain country. Never has there been a better grain crop in Utah and Idaho than this year, nor has the crop of sugar beets been more promising nor the general price condition better.

The last quarterly report of the Utah state bank commissioner, dated Oct. 10, shows continued improvement in financial conditions.

Building activity in Salt Lake City during October was nearly double that of the corresponding month of last year.

Electrical dealers are planning to make the coming Christmas more than ever an electrical one, and there is every indication that holiday trade will be very good.

With the industrial plants and mines operating practically at capacity and the agricultural people receiving bettered incomes the situation is good. There is, of course, room for improvement in business generally, but more and more of that improvement is continually in evidence.

Spokane

General conditions continue favorable. Good weather continues and many lumber camps are still in operation. Practically all of the woodworking establishments in Spokane are operating at a high level of production. A recovery from the slight slump in August and September is evident. One large sash and door plant is operating on two shifts.

The Sperry Flour Company reports an output of 51,378 bbl. of flour for October, this being the largest ever attained by their Spokane plant.

Wage reductions have gone into effect at Butte. Activity in the Coeur d'Alene district is well maintained, the resumption of work at the Gold Hunter Mine near Mullan, shut down since the fall of 1919, offsetting the recent shutdown of the Callahan Zinc Lead properties. Activity in eastern Oregon fields is increasing with the Sumpter Smelter in actual operation. Southern Idaho sees improvement through resumption of production by two free milling gold properties. Increased output of lead, zinc and silver is looked for from southern British Columbia on account of the large mill of the Consolidated Mining and Smelting Company at Kimberly, coming into production during September and October.

Labor situation is reported good. Some shortage of skilled planing mill workers is felt locally.

In practically every industrial plant in Spokane, a marked increase in power consumption is reported for 1923, as compared with last year, thus indicating the general improvement in business.

Denver

Business conditions are a little slower although regarded optimistically. Bankers are looking for improvement in November and December because a large amount of money is to be paid out at that time to beet growers and because of the holiday buying season.

Clearings of Denver banks for October totaled $156,712,166, a decline of $14,000,755 from the total for October last year. However, this year's clearings, including September, have averaged 11 per cent above last year.

Building, as usual, is active, Denver building permits for October, 1923, totaling $2,386,600, an increase of $902,100 over October, 1922. A total of 630 permits was issued last month.

Disagreeable weather and a labor scarcity in parts of the state have delayed harvesting, especially in the corn and beet belts in the eastern and southern parts of Colorado. Employment in the southern part of Colorado in the vicinity of the coal mining fields appears to be well balanced.

Local electrical jobbers report an active trend in appliances and pole line hardware. The general trend appears steady.

Seattle

Electric jobbing firms in Seattle, generally speaking, report excellent business. Sales volume is heavy, a major portion of buying being done by central stations, telephone companies, railroads and lumber manufacturing concerns.

Household appliances are moving rapidly, this movement involving electric ranges, washing machines and smaller domestic equipment. The lamp season, at hand, likewise presages increased sales along this line.

Prices on standard materials are holding, the only decreases noted being on certain specialties.

More than twenty million dollars' worth of building permits have been issued thus far in Seattle this year, this amount exceeding by one million dollars the total valuation for all of last year.

Mills reporting to the West Coast Lumbermen's Association for the week ending Nov. 3, manufactured 109,354,044 ft. of lumber and production for reporting mills was 24 per cent above normal. New business was 24 per cent below production. Fifty-two per cent of all new business taken during the week was for future water delivery. New business by rail amounted to 1,113 cars.

Local retail stores and establishments report Christmas buying has started off briskly with every indication that this season's business will set a high water mark for holiday trade.